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Agricultural Outlook Forum'96

Proceedings

Presented by the U.S. Department of Agriculture

February 21 & 22, 1996

Washington, D.C.

PREFACE

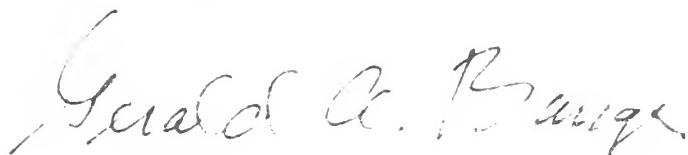
This volume is the proceedings of Agricultural Outlook Forum '96, which took place on February 21 and 22, 1996, at the Omni Shoreham Hotel in Washington D.C. The Forum, the seventy-second outlook meeting sponsored by the U.S. Department of Agriculture, was attended by more than 650 people representing all facets of the agricultural community.

The speeches in this volume reflect the variety of topics and viewpoints expressed during the Forum. On the opening afternoon, distinguished speakers discussed the outlook for agriculture in 1996 and beyond, new farm policies, and the challenge of expanding international trade. Agricultural trade was also a prominent topic on the second day, both in forums on the detailed farm and commodity outlook and in special sessions on the changing world marketplace and China's place in world agriculture.

The final paper in the proceedings, presented at a pre-conference seminar, concerns issues shaping the long-term agricultural trade outlook. USDA released a detailed assessment of long-term prospects at the Forum entitled "Long-term Agricultural Projections to 2005, Staff Report WAOB-96-1." Copies are available from ERS-NASS at the address noted below.

Audio tapes of all sessions, and video tapes of the plenary sessions provide a complete record of both presentations and questions and answers. Readers interested in obtaining tapes are referred to the order form at the back of this volume.

Additional copies of these proceedings are available from ERS-NASS, 341 Victory Drive, Herndon, VA 22070; phone 1-800-999-6779. Many of the speeches presented here are also available on the Internet. For more information or questions about the Outlook Forum, call 202-720-5447.



GERALD A. BANGE
Chairperson
Outlook Forum Steering Committee

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AGRICULTURE POLICY FOR A NEW CENTURY

Dan Glickman
Secretary of Agriculture, U.S. Department of Agriculture

I want to welcome you all to USDA's Agricultural Outlook Forum.

We'll spend the next 2 days talking about the future of agriculture for 1996 and beyond, and that's more of a challenge than usual. Right now it's difficult to project an outlook for agriculture for the next week, let alone the next century.

We're in the middle of a debate over budget and policy which will have far-reaching effects on American agriculture.

You know how debates go. It's always easier to find agreement in the abstract than in the specific. Take the preacher who was trying to give his congregation a message about sharing. He looked at one member and said, "*Now Henry, if you had 3 houses, you wouldn't mind giving up one so some poor family would have shelter, would you?*" — "*Of course I wouldn't,*" said *Henry*. — "*And if you had 3 Cadillacs, you wouldn't mind giving up one of them...?*" — "*Of course not.*" — "*And if you had 3 milk cows...?*" — "*Now hold on,*" said *Henry*. "*I've got 3 milk cows!*"

There *has* been progress. The Senate has passed a bill and it's a step in the right direction. It begins to address some of the Administration's concerns about a safety net for farmers, rural development, agricultural research, global competitiveness, and the environment. I am pleased the Senate bill includes a Fund for Rural America -- funding for research and rural development. I have urged the House to take up the bill as soon as possible so we can get a final bill enacted and end the uncertainty for American farmers.

OPTIMISM AMIDST UNCERTAINTY

Despite the uncertainty of the farm bill, despite tight stocks, despite the complexities of globalization, I'm extremely optimistic about the future of American agriculture.

I'm optimistic because I know we have a fundamentally strong farm economy:

- Farm prices for many commodities are the highest in many years.
- Cash receipts for farmers are at record highs.
- Our exports continue to grow.
- Government spending on farm price and income support programs is the lowest since 1981.

I know we must temper this optimism with a reality check: Not all commodities and not all producers are benefitting. Livestock producers are having a particularly difficult time. I'm well aware that grain and soybean stocks -- both in the U.S. and throughout the world -- are tight and that demand continues to increase. And I'm aware of the bad weather in the plains states which has affected and continues to affect total crop production.

We'll spend a lot of time at this outlook conference talking about tight global grain and oilseed markets, strong prices, and prospects for 1996 crops.

But depleted stocks are only part of the story. The fact that demand is growing is good news for the United States. We're in the business of selling food and other agricultural goods, and we produce a lot more than we can use at home. And 96 percent of the world's consumers live in other countries.

Based on current prices and pre-season conditions, we believe there will be a surge in world grain production this year. A rebound in yields and more planted area is expected to raise U.S. grain production and relieve the abnormally tight stocks.

Livestock and poultry producers may be squeezed as feed costs rise but generally they are maintaining inventories. Beef, pork, and broiler output are expected to increase in 1996, and meat output most likely will continue to expand in 1997.

As the rest of the world becomes more prosperous and as population grows, demand will remain strong, particularly in Asia and Latin America. And U.S. farm prices should remain strong.

Because of higher expected prices, producers would have been looking at small deficiency payments and no set asides under a continuation of the 1990 farm bill.

As agriculture continues to move away from restrictive government programs to more market-oriented ones, what government does outside the traditional commodity programs will become increasingly important.

Investment in infrastructure -- research, conservation, rural development -- will help the transition to a more market-oriented agriculture because it will ensure that farmers have the solid foundation they need to prosper and compete in the world.

Let me amplify this point: We at USDA, in Congress, and in the media exclusively focus on commodity programs when we talk about the farm bill. The debate has become almost a fixation on the size of payments to farmers.

The farm bill *is* about commodity programs. But it's also about research, about conservation, about rural development, about trade, and about new opportunities. And they all will have a greater impact on agriculture in the future than any commodity payment.

H.L. Mencken was asked the difference between the short term and the long term. The only difference, he said, is that in the long term we're dead. So I understand that commodity programs are important in the short term. The short term matters but it's not all that matters - particularly when we are moving toward an agricultural policy focused on the long term..

IMPORTANCE OF TRADE

There is no doubt that, in the long term, trade, not commodity programs, will define agriculture's future.

Today we are releasing our new quarterly forecast for this fiscal year's exports. We expect U.S. agricultural exports to be \$60 billion this fiscal year -- up by \$2 billion from our last forecast and another record. We are well on track to achieving the long-term agricultural projection for exports of \$66 billion the first year of the 21st century. Beyond the numbers are real economic benefits, incomes, and jobs.

I just returned from my second trade mission to Asia -- our largest and fastest-growing market. I visited both China and India -- the 2 largest countries in the world where about 40 percent of the world's people live. There are very good opportunities for us in both countries.

In China, I saw with my own eyes what I already knew to be true: China is becoming an extremely important customer for a number of U.S. commodities -- particularly wheat and corn. Recently, in 1 week, we sold 2.1 million tons of wheat to the Chinese, raising their total purchases to 4 million tons this marketing year. This year they have bought more than 2.2 million tons of our corn. Two years ago, China *exported* 12 million tons of corn and imported none.

My trip to China was an extremely important visit to me and to the President. Our agriculture relationship with China is important in itself, but it can also be a bridge to help resolve other current issues between our countries.

I told the Chinese that the U.S. will continue to be a predictable and reliable supplier of food products to China. But I also strongly suggested that China be a predictable and reliable customer as well, working with us to communicate in a timely fashion what their needs will be. I also stressed that we can't let bad or incomplete science be used as an unfair trade barrier. We're still very concerned with China's 23-year ban on wheat imports from the U.S. Pacific Northwest -- a ban we believe is based on bad science.

My father always said, "Respect Thy Customer." China has bought a lot from the U.S., but the U.S. buys 4 times as much from China -- over \$30 billion more a year -- in products from electronic equipment, shoes, toys, and clothing. Our desire to see China open its markets and remove unfair or unscientific trade barriers is not an unreasonable request from China's best customer.

As important as bulk commodities are to agriculture exports, high-value, consumer-ready, and semi-processed agriculture products are the fastest growing segments of the market.

In the 1970s, nearly 80 percent of all our exports were bulk commodities. They now account for less than 50 percent of all exports. Meanwhile, consumer-ready foods went from less than 10 percent of all exports to nearly 40 percent in the same time period.

I saw this first-hand in Asia where demand growth has been concentrated in high-value products. While China is expected to be the key source of global growth in bulk trade, it is also a growing market for U.S. consumer-ready products. Obviously Japan, Korea, Indonesia and the other developing Asian markets are growing as well.

India has a relatively affluent middle class that is about the size of the entire U.S. population. India is fairly self sufficient now in production of wheat and rice, but I am hopeful we will see increased demand for U.S. exports on the value-added side.

Economies in Latin America also are expanding rapidly. And Mexico, although working to recover from the peso devaluation, remains an excellent long-term market for U.S. exports.

NEED FOR FREE TRADE

The movement toward freer trade must continue. And the scare tactics of those who want to build a wall around our country must be rejected. But in fighting for freer trade, we must understand the response of those who want the U.S. to withdraw from the world.

It taps into the very real anxieties of many Americans.

People have lost good paying jobs, families need 2 full-time incomes, workers worry that U.S. companies will take advantage of low-paid labor in other parts of the world.

But isolationist retreat inevitably leads to a lower standard of living and fewer jobs for people in this country. It reminds me of another H.L. Mencken quote that for every complicated problem there is a simple -- and a wrong -- solution.

Pat Buchanan has said his first act as President would be to cancel the GATT and NAFTA agreements. That would be a disaster for agriculture because export growth is a major factor in increasing income to our farmers and ranchers.

But the U.S. demands a fair and level playing field. That is why this Administration has been aggressively opening up foreign markets and taking steps against unfair trade practices. One example is the recent announcement of a reduction in Canadian lumber into the U.S. You will hear more details on this and other trade issues in a few minutes from our U.S. Trade Representative Mickey Kantor.

Bringing down trade barriers is only part of the battle. As traditional restrictions -- tariffs, quotas, levies -- are eliminated, there will always be efforts to replace them with hidden restrictions.

So we have to be vigilant to ensure that our trading partners live up to their obligations and that new non-tariff barriers don't take the place of old tariff barriers.

Phony barriers come in many forms. One form they take is that of sanitary or phytosanitary restrictions.

The Uruguay Round trade negotiations set new rules which require sound science as the basis for sanitary and phytosanitary trade measures. Those rules must be followed.

We have asked the World Trade Organization to intervene on the European Union's hormone ban on beef. This issue is a high personal priority for me as well as for the Administration. We are determined to end this long-standing unfair trade practice and restore access for U.S. meat exporters to this important market. The evidence is overwhelming that proper use of these hormones poses no danger to human health.

Another example is the recent effort by Russia to cut off our poultry exports -- again on the basis of unsound science. Let me say it again: using a non-tariff barrier based on unsound science is simply unacceptable to us.

American agriculture is currently twice as reliant on international markets as the U.S. economy as a whole, and by the year 2000 it will be 2.5 times as reliant.

As this trend continues, foreign economic conditions, policies, and the weather increasingly will affect the economic fortunes of American producers.

Long-term market trends are favorable to U.S. producers. But markets -- especially agricultural markets -- are volatile.

In the past, the government could moderate the effects on producers with safety nets, acreage set asides, and stock management. That moderating capacity will be much less in the future.

BEYOND COMMODITY PROGRAMS

Let me repeat: How American producers compete in an increasingly market-driven economy will depend on many factors beyond commodity programs.

Even if we simply continued current law, USDA analysts estimate government program payments would account for only 1% of total gross income of farm operators by the year 2000.

The Administration supports making agriculture more reliant on market forces. We laid that card on the table -- freeing farmers from planting restrictions -- long before the so-called "Freedom to Farm" plan was talked about.

Our policy priority today is to make sure we put enough resources into research, trade development, conservation practices, and rural infrastructure to enable rural areas to participate in the growing global markets.

That is why we need a comprehensive farm bill.

American agriculture is the most competitive in the world. We remain competitive because of our unequaled marketing system, because we have maintained the productivity of our farms by investing in conserving soil and water. We remain competitive because of the quality of our research.

It remains the role of the federal government to keep open access to world trade; to ensure research for new crops; to keep our soil sound, our water safe, our wildlife protected; to inspect food before it goes on American tables, and to make sure no American goes hungry.

A true transition program away from the farm programs of the past must protect and maintain these investments. If we do less, we risk eroding the advantage we have won over the years.

FUND FOR RURAL AMERICA

The need for research and rural development is the reason why the Fund for Rural America is critical -- to bring economic prosperity to every part of the country.

The Senate bill authorizes the Secretary of Agriculture to transfer \$300 million to this Fund over 3 years -- two-thirds of it to rural development activities and one-third to research grants.

This amount represents an important investment -- yet an investment which still falls far short of meeting essential needs in rural America today.

The water needs in rural America alone could eat up the authorized funds. It's almost the 21st century and millions of Americans don't have clean drinking water! And there are other problems in rural America besides water. There is currently a backlog close to 50,000 applicants for low-income single-family housing loans. That equals about a \$2 billion need.

CONSERVATION AND ENVIRONMENT

Research improves not only the economic quality of rural life, but environmental quality as well.

Producing food and fiber to serve our consumers here and around the world puts tremendous pressure on our natural resource base.

In my first year as Secretary, I have seen first hand that managing natural resources is a serious and controversial business. Decisions we make today on resource use will have effects on people tomorrow and for decades to come.

This is a very sobering experience. It is not like what I was used to in Congress. If we changed the 0/92 program or the Farmer-Owned Reserve Program and it didn't work -- no problem, we fixed it and then that's it: no more problems.

But when you make major changes to conservation strategy and lose soil, you can't change the legislation to get it back because it's gone.

The same with water quality -- if Congress guts swampbuster and water quality suffers for all Americans, can we ever regain the quality? And if so, at what cost?

I don't think many Americans want to test nature this way.

Under the Conservation Reserve Program, since 1986 more than 36 million acres of erodible and environmentally fragile cropland have been converted to grasses and trees. We have

to continue a sound CRP program with the authority to target and enroll new -- environmentally fragile -- acreage. We have to maintain a strong Wetland Reserve Program that preserves the landowner's ability to choose the length of easements. And we have to make the conservation compliance and swambuster programs more reasonable, effective, and flexible.

CONCLUSION

The House needs to build on the progress the Senate has made. It needs to think about the long-term needs of agriculture, not just the short-term budget battle.

We have always called this legislation a "Farm Bill." But its actual title in 1990 was "The Food, Agriculture, Conservation, and Trade Act of 1990." We should have called it the "Research, International Trade, Forests, Extension, Nutrition, Rural Development, Conservation, Energy, Food Stamps, Environment, Credit, Food Safety,—and Farm Commodity Act of 1990."

Or we could just call it the Food Bill. Or the People's Bill.

Last year, \$6 billion of USDA funds went to commodity programs. This was only 10% of USDA's \$62 billion budget.

We don't know what the future holds. Crop prices are high now and trade is booming, but conditions can change fast. We've seen it before, and we'll see it again. To think otherwise is to ignore the long-term reality for the short-term fix.

That is what worries me about Congress locking in farm payments on a fixed basis for 7 years. Farmers would get payments no matter what happens in world agriculture, no matter what the price of wheat or corn is, no matter what changes there are in weather conditions or political conditions, no matter what the volatility of crop prices.

If we go to a system of paying farmers -- even on a transition basis -- without regard to market conditions, then we must recognize that in a period of increased volatility, our research, conservation, and risk management programs must pick up the slack that farm programs have provided. The taxpayers of this country should also be assured that payment will not be made to producers who don't use their land for agricultural purposes.

The Congress that will write the next farm bill is, like the society it represents, more urban and suburban than ever. The men and women who will make agriculture policy for the rest of this century generally don't have a rural or farm orientation.

So we need to emphasize—over and over—to Congress and to the public—the connection between economically healthy farms and a safe, abundant food supply, and the Nation's overall economic health.

While I will not belabor the point here, at the same time we are finalizing a farm bill, we must continue our efforts to promote competition and discourage concentration in American agriculture, particularly in the livestock industry. This month, I established an Advisory Committee on Concentration to consider some of the outstanding concerns and I have asked for their recommendations by June 7.

Our concerns have to be more than worrying about the "efficiency" of a market. A monopoly can be very efficient, but offer few avenues for price competition. Farmers, ranchers, producers, processors, and consumers demand that those choices be available.

Americans have one natural resource we should take full advantage of: we're an optimistic people.

I heard a story about a kid who gets a baseball and goes outside to practice hitting his new ball with his bat. He can't wait to become a player and beat Cal Ripken's record.

He throws the ball in the air, swings and misses. He does it a second time and misses again.

On his third try, he still doesn't hit the ball.

But he's not discouraged. Instead, he smiles and says, "Wow, what a pitcher!"

Thank you.

THE OUTLOOK FOR U.S. AGRICULTURE

Keith Collins
Chief Economist, U.S. Dept. of Agriculture

Welcome to USDA's 1996 Agricultural Outlook Forum. Today and tomorrow, a great variety of commodity, trade, weather, economic and other experts will assess the current state and future direction of U.S. and world agriculture. My remarks will present a general view of the U.S. agricultural economy, serving as an introduction to the many details to be discussed by the assembled experts. First, I will address a critical issue in shaping public interest in the food and farm outlook and that is the current prospects for the grain-livestock economy in light of this year's sharp rise in grain prices. Second, I will provide a brief assessment of the overall prospects for the agricultural economy, and third, I will comment on long-term adjustments to the current situation.

Critical Issue: Consequence of Low Grain Stocks for Producers and the American Public

Two years ago, in shifting the date of this Forum to early in the year and changing its format, we committed to reducing our discussion of near-term developments in favor of more medium- and long-term analysis. We pledged to regularly present a 10-year baseline. Despite the uncertainty of farm policy, we have stuck to that promise and made available our most recent 10-year projections, on which I will comment in a few minutes. Despite our desire to emphasize the longer term, several unprecedented developments compel focusing a good portion of these remarks on shorter-term issues.

Low grain stocks and record-high grain prices. To review, we expect record-high season-average farm prices for wheat in 1995/96 and near record for corn. For wheat, carryover stocks on June 1 are forecast at 346 million bushels. As a percent of total use, that is lower than the often-referenced 1973/74 season and the lowest since 1947/48. Domestic use is down a little from recent years but exports are expected to be the third highest in the 1990s. For corn, carryover stocks are forecast at only 457 million bushels, which as a percent of use is the lowest since 1937/38. Domestic feed and residual use is forecast to fall 17 percent from last season, while exports reach the highest level in the 1990s.

These once-in-50-years lows for stocks relative to use mean demand movements for the rest of this season and changing prospects for the 1996 crops make price movements highly uncertain. The low stocks have put feeders, processors, traders, and consumers at much greater risk if 1996 harvests are subpar.

Last year's cotton experience. As we watch the decline of grain stockpiles, there may be a lesson in last year's cotton market. Prices were the highest since the Civil War and leading cotton analysts were making headlines saying we will run out of cotton before the year is over. We did not, because both domestic and export use turned out lower than what was being forecast at the mid-year point. At last year's Outlook Forum, USDA forecast total 1994/95 cotton use to be 21.6 million bales with carryover stocks of only 1.6 million bales. However, total use turned out to be 20.6 million bales, with most of the drop coming in exports. Carryover stocks turned out to be a more comfortable 2.65 million bales. The lesson for grains is this: prices will ration demand to assure an adequate level of working stocks is carried over at year end. While we did not run out of stocks of cotton, we did see back-to-back high price years for cotton, something we have not seen for corn.

Prospects for the rest of this season. Focusing on corn, its price during a crop year normally is weakest during October and November when producers are harvesting the new crop (chart 1). Prices are usually 5-10 percent below the season-average then and peak the following June and July at 5-10 percent above the season-average. This pattern changes in a year when production is sharply cut back, causing low stocks and high prices. In supply-reduced years, the price peak has often come earlier with prices tailing off over a somewhat longer period. This year, stocks are being drawn down by a combination of reduced yield, but also strong foreign demand, so the bad-weather year pattern of early peak prices may not hold. Based on current futures prices, a slowdown in export sales, the onset of Southern Hemisphere production, and expected higher plantings, the corn price high appears likely to be a little earlier than normal, peaking perhaps during April-June at a monthly average farm price some 15 percent above the season-average price, or about \$3.70 per bushel (chart 2). With average 1996-crop conditions, prices would decline thereafter into the fall.

Would such a price pattern set in motion disruption of exports or feed use and cause livestock production cutbacks that have serious implications for future food prices? The short answer is: we don't think so. This year's price pattern has thus far caused no sign of curtailment in export sales or major trimming of livestock herds, and that is of course why we forecast such historically low stocks. Corn export sales in early February are 82 percent of the current crop year forecast, even though only half the year has expired. On the domestic side, 1996 beef production is expected to rise 2-3 percent. Even though fed cattle prices are lower than a year ago and feed prices up, fed cattle prices have still been above the average breakeven level, as lower feeder cattle prices have offset much of the higher feed costs. Lower feeder prices, will increase cow slaughter as we move through the year, but the pace has not yet been rapid, and by yearend, the beef cow inventory is likely to be down slightly. This would be the first year-over-year drop since 1990. It appears that forage supplies are adequate enough to let cow/calf operators wait for development of the 1996 feed crop before making major breeding cow liquidation decisions.

For hog producers, the current expected pattern of feed prices will cause some higher cost operators to reduce breeding herds this spring. However, most producers likely will still cover cash costs. Pork producers increased herds last fall, consequently production this year is expected to rise 3 percent, with most of the production increase and price pressure in the fall, a time when a normal 1996 corn crop would mean lower feed costs. For poultry, broilers had strong net returns in 1995, supporting expansion which is expected to raise production 6 percent in 1996. High feed prices are reducing returns but cash costs are expected to be covered for much of the rest of this corn marketing year. Milk producers appear to be cutting back; milk production in 1995/96 is expected to be up less than 1 percent, compared with 2.5 percent last year.

So the livestock, poultry and dairy industries are making adjustments, although not major, in response to the higher feed prices. These moderate adjustments should help maintain a stable food CPI. If 1996-crop corn prices were to move into the \$4.00 plus per bushel range due to reduced yield prospects, hog and poultry producers would reduce animal numbers first with cow/calf operators making their big reductions in the fall. The result would be higher meat prices in late 1996 and into 1997 and, for beef, into 1998 and beyond.

Prospects for the Overall Farm Economy in 1996

Building on the possible grain-livestock developments just outlined, a picture of the 1996 farm economy may be crafted starting with the prospects for the 1996 crops. Although legislative authority is not yet in place, we can expect no acreage reduction requirements for 1996 crops, which is consistent with the Secretary's stated intentions and the pending Senate and House bills.

1996 crop plantings. With higher prices, no acreage reduction program and better planting-time weather, corn acreage may rise nearly 15 percent to over 80 million acres, up from 71 million in 1995. Winter wheat acreage was up 7 percent, and total wheat acreage could rise by 4 million to 73 million. Sorghum, barley and oats acres may all rise as well. With trend yields, these area increases would raise production above prospective use in 1996/97, as grain exports may drop a little reflecting increased foreign production. Stocks would rise; however, the increase would be quite modest. Wheat stocks would be in the range of 400-450 million bushels and corn, 700-750 million. Wheat farm prices would drop back a little but still be near \$4.00 per bushel, and corn farm prices would decline to near \$2.75 target.

For cotton, this year's grain prices have increased relative to cotton and about a 10 percent decline in planted area is expected. With a return to average yields and total use expected to be about unchanged, carryover stocks would rise about 2 million bales to nearly 5 million, and prices would weaken. Soybeans will face increased competition from corn. The last couple of years at planting time the ratio of soybean-to-corn prices has been about 2.4 to 2.5 to 1. With the runup in corn prices, it has been running 2.1 to 1 this winter which should cause some corn to be planted on traditional soybean land. However, the incentive to switch based on futures prices is

less. For 1996, we forecast at most a 1.5- to 2-million-acre decline in soybean area. Even with a small reduction expected in exports, carryover stocks would decline, maintaining 1996 crop soybean prices at about this year's level.

Plantings under Congressional bills. These forecasts are based on extension of current law. If the commodity provisions for 1996 reflect the current House and Senate farm bill provisions, these forecasts are not expected to change much. The Congressional bills allow essentially complete planting flexibility, including the planting of corn in excess of base onto soybean area. Other things equal, the Congressional bills could mean a little more corn and less soybeans than our current-law forecasts. However, because the price incentives to switch are not that great and because any enacted farm bill will come so close to planting, it is likely that corn and soybean acreage would be little different than under current law. Likewise cotton may differ little. There would be some incentive to use the greater flexibility provisions to reduce cotton and raise feed grains in the Southern Plains but some producers could elect to plant cotton on soybean land. Rice faces the biggest potential adjustment as there is no minimum planting requirement under the Congressional bills. Rice acreage could be up to 0.5 million lower than under current law. If so, rice farm prices in 1996/97 would likely average at or above this season's forecast of \$8.75 per cwt, rather than drop 15 percent as expected with a continuation of current law.

Livestock, poultry and milk summary. Turning to 1996 livestock, poultry, and dairy prospects, I have already described the adjustments we expect this year in reaction to grain prices. Overall, a 4-percent increase in meat production is expected, lowering prices across the meat counter. Although the increase in beef production is expected to be below last year's, it may be enough to reduce farm level beef prices 2-3 percent. The relatively larger pork production increase may result in an 8 percent pork price drop, with prices particularly weak in the second half of 1996. Broiler prices may decline 4 percent. Milk is a different story. Dairy product surpluses will be the lowest since the mid-1970s. Removals on a total solids basis will be the equivalent of an extraordinarily low 2 billion pounds of milk. Milk prices for 1996 are expected to be 4-5 percent above 1995.

Food prices. The CPI for food rose 2.8 percent in 1995, up slightly from 1994, with much of the rise due to higher prices for fruits and vegetables. In 1996, the highlight for the American consumer will be food price increases below the overall inflation rate, as the strong increase in meat production lowers meat prices slightly. Red meat and poultry represent 24 percent of the at-home food CPI. Per capita meat consumption should reach a record 216.5 lbs. in 1996. With meat prices down, the increase in the 1996 overall food CPI is likely to be toward the lower end of a forecast range of 2-4 percent. With average weather, consumers should see smaller price increases for fresh fruits and vegetables than last year. Cereal and bakery product prices will rise reflecting higher grain prices, but the increase at retail is likely to be 3-5 percent as farm-level grain prices represent only about one-tenth of the retail prices of these products. Beyond 1996, meat prices will likely increase and raise the food CPI to nearer the overall inflation rate.

Indicators of Financial Performance

The overall state of U.S. agriculture is generally positive, but economic indicators suggest rising concern in a couple of areas. Compared to 1990-94, farm receipts, assets, and equity were up in 1995 and further increases are expected this year (table 1). Although agricultural debt is increasing, the debt-to-asset ratio is stable at about 15.8 percent. Farm real estate values continue to increase, reflecting higher crop receipts, lower interest rates, and low probability that the farm bill will hurt incomes in the near term. Land values were up 6.4 percent on January 1, 1995, compared to an average of 3.5 percent during the first half of the 1990s.

The value of agricultural exports were up 31 percent in fiscal year 1995 compared to 1990-94, and 1996 exports are projected at a record \$60 billion. Net cash farm income in 1996 is expected to again be about the same as in 1995 and 1994. Commodity program outlays in fiscal year 1995 were \$6 billion, 43 percent below the average for 1990-94, and are projected at \$2.7 billion in fiscal year 1996 under current law. This means our current calendar year estimate of deficiency payments to producers in 1996 under current law is below \$2 billion. However, under the Congressional bills, transition payments could rise as high as \$8 billion, adding more than \$6 billion to our forecast of net farm income for 1996.

We know that aggregate indicators mask varying performance of individual sectors. Examining net returns for specific sectors reveals corn, wheat, and soybean per acre returns are up significantly in 1995 compared to 1990-94 (table 2). The tight supplies and strong prices that characterize grain and oilseed markets, while expected to moderate in 1996/97, will likely keep net cash returns above earlier levels. Returns to cotton producers in 1995, while below earlier levels due to reduced yields, are expected to improve with better yields in 1996.

In the livestock sector, the average net cash return for hog producers in 1995 is similar to 1990-94 levels, but returns in 1996 are expected to decline, and perhaps turn negative. A key area of concern is among cow/calf operators who are already experiencing negative returns and are expected to become more negative in 1996. Broiler producers benefited from higher average returns in 1995 than earlier as strong demand and rising prices offset higher feed costs. Returns to broiler production are expected to fall in 1996, but remain near average 1990-94 levels.

Last year, reduced production and higher grower prices boosted farm value, encouraged imports, and slowed exports of fresh-market fruits and vegetables. The horticulture industry is expected to export about 16 percent more in 1996 with exports rising to over \$10 billion and imports rising slightly. With expected sales value similar to last year, net cash income to the sector may decline. Larger supplies and smaller consumer price increases are expected to increase per capita-consumption of fresh fruits and vegetables.

Longer term adjustments

We are providing Forum registrants with copies of our most recent 10-year baseline projections for U.S. agriculture. This morning Rip Landes and other staff of the Economic Research Service led a workshop on projected foreign developments and the factors underlying the export projections. I want to close by making a few comments on these projections.

The projections are based on provisions of the 1990 Farm Bill, trend yields and specific assumptions about other U.S. and foreign policies and variables. The projections are only as good as these assumptions which, in many cases, will not hold. Nevertheless, the projections are useful to indicate the potential market adjustment from the current situation and to peg, at least for now, the emerging trends in the markets of the future.

The baseline sheds light on questions about future prospects. One key issue is what will economic growth be like? Despite a slower 1996 U.S. economy, we continue to see positive trends in the world economy which will support U.S. export expansion. Developed country GDP is projected to average a moderate and sustainable 2.5 percent over the next decade. Developing country growth may average about 5.5 percent, slightly above the first half of the 1990s. To no one's surprise, key growth regions include East Asia and Latin America. Russia's economic decline is forecast to bottom this year with the entire FSU turning positive by 1998. Mexico's 7 percent decline in 1995 is expected to turn marginally positive in 1996 and, over the next 5 years, average near the pre-devaluation projected growth rate.

A second key question underlying the outlook is how will the economic prospects translate into foreign demand? Last year, we projected U.S. agricultural exports would reach \$68 billion by 2005. That projection is now raised to \$80 billion. Much of the increase reflects growth in high-value exports, such as meats and horticultural products, but there is also a stronger outlook for bulk commodities and higher projected commodity prices. China with its increased grain imports, dominates this year's adjustments. A year ago, we pegged China to still be a net coarse grain exporter in the year 2000. Now, China is projected to be a net importer of 7-8 million tons, more than offsetting lower expected FSU imports.

A third key question is how will stronger demand play against land availability and use? The outlook is for increased utilization of the agricultural land base for farm production. Stronger exports combined with domestic demand growing slightly faster than population offset yield increases and pull more land into production. The land comes from acreage reduction programs which, used liberally in the past, are projected to be used for only a few years and only for cotton. Higher prices also mean less land is enrolled in the 0-50/85-92 provision. Finally, our baseline assumes that the CRP contains 28 million acres in 2000, down from the current 36.4 million. The drop is based on an estimate of contract extension and virtually no new enrollments. The future

size and composition of the CRP will ultimately depend on contract extension policy, funding, enrollment authority, and environmental targeting.

A fourth interesting question is how normal is the return-to-normal from the current tight market situation? The answer is it is a little different than recent history. Under current farm policy, commodity markets are shown to recover to a little tighter supply/demand balance than recent trends. For example, the average stocks-to-use ratio for corn over the next decade is projected at 8-9 percent which, in the past, has often been considered "normal" at 12-13 percent. The tighter markets do not reflect a food scarcity problem. Economists measure scarcity and crisis with relative prices, and although the tighter market balance means a little higher major crop prices than previously expected, inflation-adjusted prices are still projected to decline over the next decade, but not as fast as the long-term trend.

The fifth and last question I want to address is what does all this mean for prospects for overall financial performance of U.S. agriculture? The picture is one of overall stability, with net cash income changing little from recent levels. Based on current programs and our CRP assumptions, future crop prices now look a little stronger and livestock and products a little weaker than our previous thinking. The role of government would continue to shrink with direct government payments amounting to only 1 percent of gross cash income by the year 2000.

Overall, U.S. agriculture is described by generally favorable economic indicators, but as always, these indicators mask some segments which are financially vulnerable. U.S. agriculture in the mid-1990s is dominated by tight grain supplies and strong prices, and solid domestic and global demand, which is likely to prevail for the next couple of years, but reduced profitability in the livestock sector that may reduce the growth in meat production in future years.

TABLE 1. ECONOMIC INDICATORS FOR U.S. AGRICULTURE (billion \$)

Item	Avg. 1990-94	1995e	% change	1996f 1/
Farm receipts 2/	181.7	193.5	6.5	193-203
Assets	879.5	956.6	8.8	985-995
Liabilities	140.6	150.7	7.2	153-157
Equity	738.9	805.9	9.1	830-840
Farm real estate (\$/acre)	723.0	832.0	15.0	na
Exports	41.3	54.2	31.2	60.0 3/
CCC outlays (fiscal year)	10.6	6.0	-42.9	2.6
Government payments	9.6	6.2	-35.4	3-5

e=estimated; f=forecast

1/ From "Long-term Agricultural Projections to 2005," USDA/WAOB, Feb. 1996.

2/ Includes farm-related income.

3/ From "Outlooook for U.S. Agricultural Exports," February 21, 1996.

TABLE 2. RETURNS (\$/unit) 1/

Item	Avg. 1990-94	1995e	1996f 2/
Corn (acre)	167.18	193.95	192.78
Wheat (acre)	89.34	101.72	92.51
Soybeans (acre)	134.12	168.65	178.44
Cotton (acre)	224.56	159.69	210.29
Hogs (100 lbs)	6.90	6.83	-5.12
Cow/calf (per cow)	86.95	-8.56	-26.59
Chickens (100 lbs)	4.87	6.40	3.30
Dairy (100 lbs of milk)	2.33	0.76	0.97

e=estimated; f=forecast.

1/ Crops--return over variable costs for program participants for crop years; cow/calf, dairy and hogs (farrow to finish)--returns over cash costs with dairy on marketing years; chickens--returns over total costs.

2/ From "Long-term Agricultural Projections to 2005," USDA/WAOB, Feb. 1996.

CHART 1.

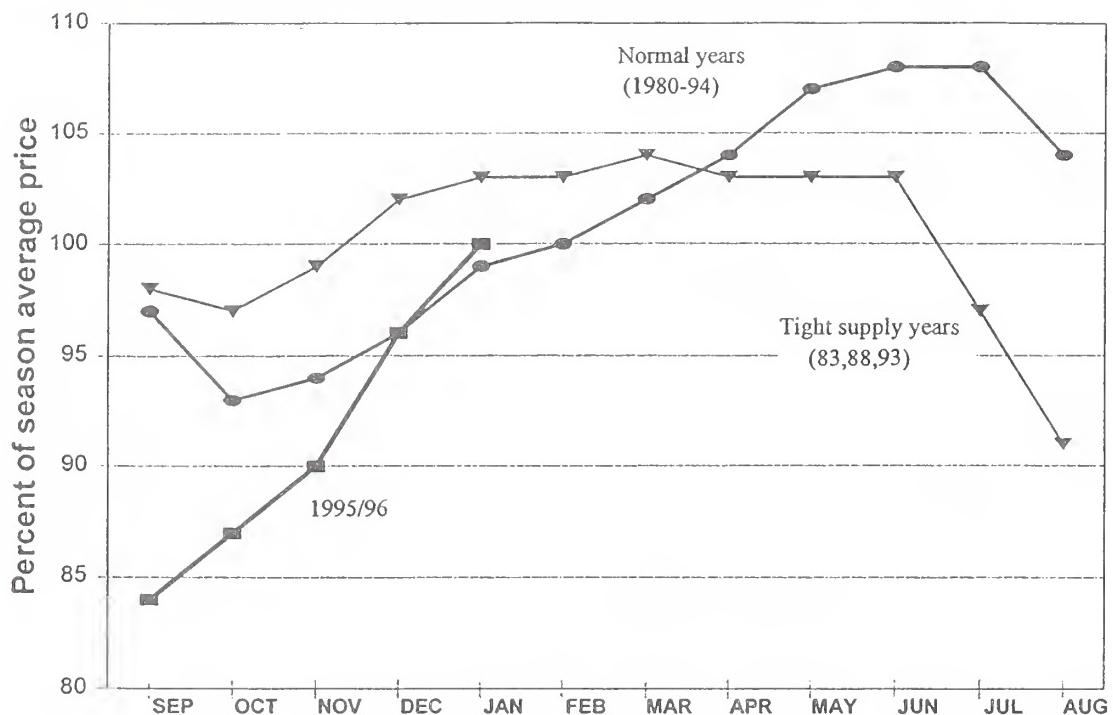
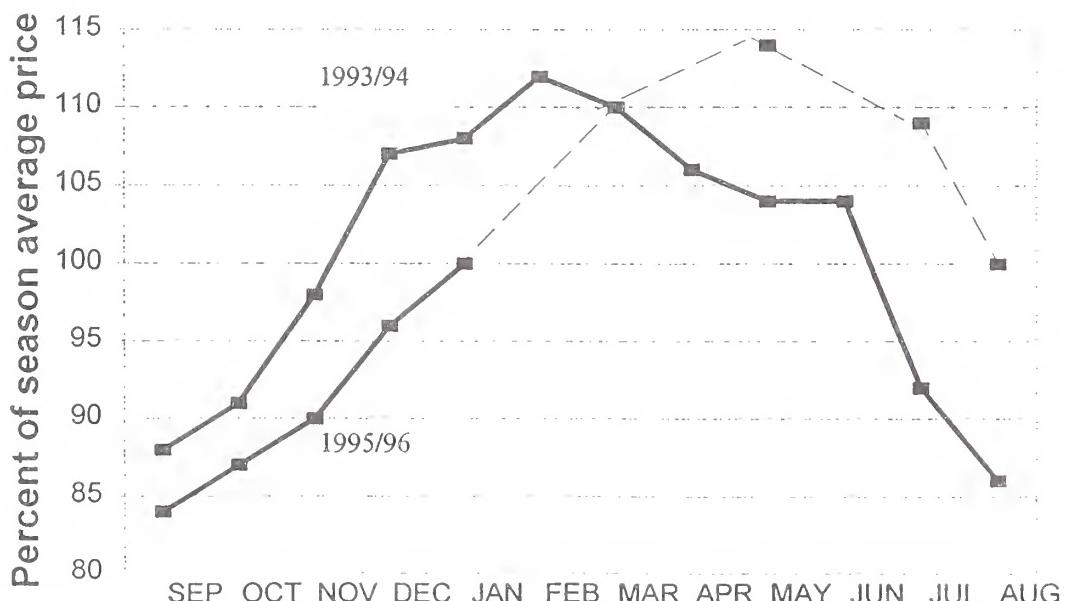
SEASONAL FARM PRICE PATTERNS FOR CORN

CHART 2.

SEASONAL FARM PRICE PATTERNS FOR CORN

Note: Projections are mid-February CBOT Futures Prices for delivery month adjusted to farm level.

NOTES FOR AN ADDRESS TO
THE 1996 USDA OUTLOOK FORUM
WASHINGTON, D.C.
FEBRUARY 21, 1996

by Michael N. Gifford

Acting Assistant Deputy Minister
Market and Industry Services Branch
Agriculture and Agri-Food Canada

I am pleased that this Panel has been asked to focus on the theme of "Building Prosperity with U.S. Trading Partners". I have been asked to provide you with Canada's perspective - a perspective which is rather unique to the extent Canada is not only one of your most important two-way trading partners in agri-food, but we are also, in a multilateral context, a major competitor as well as a major collaborator.

It struck me, in preparing for today's presentation, that a session like this would have been a very different event 10 years ago.

The regional and world trade accords which we are now implementing did not exist a decade ago. Then, agriculture was clearly the "bad boy" of international trade and the pessimists amongst us wondered whether we would ever see the day when agriculture joined the trade liberalization mainstream.

Cast your mind back. In the mid-1980's non-tariff barriers were pervasive. Record levels of trade distorting governmental support were in place. Domestic agricultural policy in almost every country was formulated in a vacuum -- with little or no attention paid to its international impact. Under the old GATT, agricultural exceptions were the rule -- and they often varied from country to country. GATT members routinely blocked the adoption of GATT panel findings that went against their interests. In

short, there was no rule of law in agricultural trade. What we had instead was anarchy.

Who would have predicted in 1986 that over the next ten years:

- the three nations of North America would join together in NAFTA; or
- we would all succeed at a new round of the GATT -- creating the World Trade Organization -- and, for agriculture, finally bringing it under effective international rules and committing to return to the table again in 1999; or
- Western hemispheric leaders would agree to pursue a Free Trade Agreement for the Americas; or
- the leaders of the Asia-Pacific region, through APEC, would defy all predictions and agree to pursue regional free trade;
- and I know few people in this room would have predicted 10 years ago that there would be murmurings of a possible transatlantic free trade area.

What a difference a decade made. In this period, there has been a sea-change. The tide is now running strongly in one direction -- toward greater trade liberalization and the agreements necessary to bring such liberalization to life.

For Canada, this is a welcome change. Given our relatively small domestic market, Canada has always looked to export markets as the key to prosperity.

For example, today, more than 50 per cent of Canadian farm cash receipts come from exports. We sell 80 per cent of our wheat abroad, almost 60 per cent of our canola, fully 40 per cent of our cattle and beef, and about one-third of our pork. With that degree of trade dependence, a more open and predictable trade environment is clearly in Canada's interest.

With respect to the U.S., total agri-food trade between our two countries reached over \$16 billion (in Canadian dollars) in 1995. That's a pretty hefty chunk of business. The growth rate in that business has been impressive. It has more than doubled in the past six years, and it continues to increase. And it's roughly in balance.

You are clearly Canada's largest agri-food market. Over 50% of our exports flow to the US. On the other side of the equation, Canada is your third largest customer, taking about 12% of all your agri-food exports, and we remain the largest single market for U.S. fruit and vegetable exports.

While bilateral trade has grown strongly since the implementation of the Canada/U.S. Free Trade Agreement (FTA) in 1989, our respective exports to markets outside of North America stagnated for much of that period -- that is until this last year or so. In the last few years we have both seen a major growth in off-shore exports. Even though exports to the former Soviet Union have dropped considerably, this has been more than compensated by increased exports to Asia, Latin America and Europe.

Clearly, the change in the agricultural trade policy environment over the past decade has had a positive impact on our respective bilateral and multilateral trade performances.

Multilateral progress in improving the world trading system has been -- and remains -- Canada's highest priority. But that has not ruled out pursuit of regional agreements, provided they are consistent with the multilateral system. This was our touchstone in the FTA and NAFTA and will remain our benchmark for future regional agreements..

By virtue of comparative demography and continental geography, more fair and open trade with the United States under a rules-based regime has long been a Canadian goal. Our agenda regionally has paralleled our agenda globally: the search for clear rules and due process; a confident basis for conflict resolution; and equitable access, fairly established and fairly applied. That was why Canada entered into the bilateral free trade agreement with the U.S. -- the FTA which was the precursor to the NAFTA.

In some respects the effects of the FTA, and subsequently the NAFTA, on Canadian agriculture have been more Evolutionary than Revolutionary. After all, tariffs have been falling in our bilateral relationship with the U.S. since 1947. Indeed, in some sectors, such as meat and livestock, the market has been functioning as a de facto free trade area for some considerable time. And it has been mutually advantageous.

But in other respects the FTA has had more dramatic effects, particularly with respect to Canada's food processing sector.

Prior to our trade agreement with the United States, tariff walls on processed goods created an agri-food branch plant economy in Canada -- characterized by small production runs, trans-Canada patterns of movement, and an emphasis on production of a general range of products, rather than specialization. Even in those areas where tariffs

were absent, the risk that Canadian exports could at some time be subject to the American meat import law -- and vice versa -- limited investment in facilities that could serve a continental market.

Since 1988, the agriculture and agri-food sector in Canada has reflected a more confident investment environment created by a freer trade framework. Trans-national companies, which 10 years ago produced a full range of products in Canada at relatively high per unit costs, have rationalized their production lines, achieved longer production runs and now produce for a North American region or, in some cases have acquired world product mandates.

Small, medium and large Canadian owned food processing companies which originally had serious misgivings about whether they could compete on a free trade basis, have found to their surprise that they can compete head to head with U.S. firms in the Canadian market and to their greater surprise can increasingly compete in the U.S. market, particularly for niche products.

What is noteworthy in the way trade has grown since the FTA was negotiated has been the fact that, in many cases, trade has grown strongly in both directions in the same sectors (e.g. grains and grain products, red meats and fresh and processed vegetables). Consequently, the agri-food industry in North America has become increasingly orientated on a North-South, as opposed to an East-West axis.

However, regional free trade areas are not always frictionless. Although both countries have benefitted enormously from the gains from trade unleashed by the NAFTA, there are still some problems to resolve, largely

in those sectors where there are major differences in support and/or marketing systems.

A year or so ago, we had a nasty scuffle over trade in wheat and coming down the track is a NAFTA panel which will let both countries know by mid-year, whether either one can apply against the other the tariff equivalents resulting from the conversion of our respective import quotas. The results of this Panel will of course have implications not just for Canada's dairy and poultry tariffs, but also for the U.S. tariffs on dairy, sugar and peanuts.

There are also differences of view as to whether single desk selling agencies, such as the Canadian Wheat Board have an unfair advantage over multiple seller marketing systems.

However, these occasional differences should never be allowed to obscure the fact that the vast bulk of our two-way trade in agri-food products continues to grow on an unrestricted basis to the mutual benefit of both countries.

Thus, while it is always possible for any dispute to become so highly politicized that facts become irrelevant and perceptions become reality, I share the view that in the longer run, wiser heads will prevail and these problems will be resolved in a responsible and sensible way.

Although the nature of the political economy of agriculture is such that regional or special interests can from time to time have a disproportionate impact on public policy, in the longer-term the broader national economic interests and common sense do tend to dominate.

This is not to suggest that we are inevitably heading towards some kind of a "North American Common Agricultural Policy". Different national agricultural policies can and will continue to co-exist within a free trade area. But a free trade area means that, over time, the policies of the members will have to converge and become more, rather than less, compatible if cross-border problems are to be minimized.

In the meantime, we will have to continue to deal with periodic cross-border problems. That is why effective, objective dispute settlement is absolutely essential to successful trade agreements.

Dispute settlement was at the core of the FTA. It is at the core of NAFTA. And it is one of the singular improvements contained in the WTO. But the existence of such mechanisms does not always lead members to avail themselves of those options.

Effective trade agreements do not ensure that governments will always act according to their enlightened self-interest. But they do make that more likely -- through clear rules, clear sanctions and the availability of an impartial panel of experts to establish the facts in dispute and judge the merits of arguments made.

Currently, Canada and the United States have a few issues which are either the subject of a Panel or could become panel issues. We are also supporting each other in a number of Panel cases against third country markets where we share common export interests. Panel requests should not be viewed as a hostile act. Quite the contrary, it reflects the fact that sometimes trade disputes become so politicized that the parties need assistance in reconciling their differences. This is not a case of

surrendering sovereignty. It is a case of recognizing that the rule of law is preferable to the law of the political jungle.

I know that many in this audience will recognize that in agricultural trade relations there are relatively few examples of black or white situations. In most cases, the parties exhibit various shades of grey -with the tint depending on whether they are pursuing their export or import interests. However, external and internal pressures are ensuring that the shades of grey are beginning to converge.

Although, agricultural support and marketing systems differ from country to country, agriculture ministries today face remarkably common challenges: to make our industries more competitive, to encourage a more "growth and market orientated" mind-set, to get the best value out of shrinking government budgets, and to encourage adaptation to a more open and interdependent trading system.

Canada is facing all of these challenges.

Domestically, Canada implemented a package of fundamental and far-reaching agricultural reforms announced in the federal budget of last February. This responds to the pressure to reduce deficits -- but also to the need to be as innovative, efficient and competitive as possible in what is fast becoming a global agricultural village.

Last February, we moved to bring our domestic policies more in line with a more open and interdependent trading system. We ended one important subsidy that had its origins in the last century. Subsidies under our Western Grain Transportation Act have now ended, and Canada is now entirely out of the export subsidy business in the grains and oilseeds

sector. We expect that, as a result, our prairie economy will strengthen -- with higher value crops, greater diversification -- including more livestock, more value-added processing and a more efficient transportation system.

More open trade agreements are not an end in themselves. They are a means. A means to achieve greater domestic growth, greater stability, greater predictability, greater fairness. A way to provide an environment within which producers and processors can plan and invest with greater certainty and to face the future with greater confidence. In short, trade is one of the key means of building a more prosperous country as well as a richer international community.

And it should spur us on to meet fully the challenges we have only partly met thus far.

We must work globally to finally put an end to the era of agricultural export subsidies. And we must continue to build regional and multilateral trade frameworks that complement each other, that work together towards one objective we all share -- economic growth and good jobs.

In North America, as elsewhere, we have shown what we can do if countries work together to achieve common goals. What we must show in the future is how to turn that common ground into higher ground still.

I have talked so far about how governments have cooperated to reduce trade barriers and distortions. However, complementing the improvements in the agricultural trading system has been a parallel improvement in the underlying market fundamentals for a number of products - particularly, but not exclusively, in the grain sector.

We are all aware that grain prices are higher to-day than they have been for more than twenty years. Is this a bubble, a repeat of the 1970's which saw prices soar to record levels only to be followed by record lows a few years later? A number of observers have noted that rising populations and strong income growth in Asia and Latin America have created a more solid and sustainable basis for agricultural trade growth than the credit and inflation - led import surges of the 1970's.

This leads me to my last point -- the critical relationship between economic growth and the demand for agricultural and agri-food imports. Those of us who have been heavily involved in the agricultural trade policy initiatives of the past decade must keep things in perspective and recognize that improving the rules of the agricultural trade game, while very important, is only part of the prosperity equation. What is also required is solid economic growth, particularly in those markets whose propensity to buy food is higher than that in the more mature markets of the developed countries.

However, the explosion in the demand for agri-food imports in Asia and Latin America has an important trade policy element. That is, it is very unlikely that these markets would be growing as fast as they are without good international access for their own export products, particularly their non-agricultural products, such as, consumer electronics, textiles, shoes and steel.

Thus, I have managed to come full circle. Trade is truly a two-way street and, if the traffic is allowed to increase, all will share in the ensuing prosperity, including the agri-food sector of North America.

While much remains to be done one cannot help but be optimistic that agricultural trade has finally found its way back to the main thoroughfare,

after spending far too many years stuck in narrow backstreets and dead-ends.

Because we live in a real rather than a text-book world, there will be occasions when political imperatives will cause some to become disoriented and wander back into the back streets. However, it is in all of our interests to ensure that these deviations never again become the norm.

The trade policy initiatives of the last decade have served North American agriculture well and we will only have ourselves to blame if we do not do everything in our power to ensure that this momentum is continued as we prepare ourselves for the opportunities and challenges of the next decade.

THE VIEW FROM MEXICO

Mr. Romarico Arroyo Marroquin,
Under Secretary of Agriculture and Livestock
Secretaría de Agricultura, Ganadería y Desarrollo Rural

I'm particularly pleased to address such a distinguished audience, since this represents an excellent opportunity to present the current and long term policies of the agricultural sector in Mexico.

We believe that supported by a new policy and strategy the outlook of the Mexican agriculture is a promising one and will contribute in a significant way to place Mexico in a much better and competitive position.

My presentation will be divided in three sections, first, I will describe the legal framework that supports the current agrarian law, the second part will show results and trends in production on selected crops and finally, a brief overview of the alliance for agriculture development, President Zedillo's agricultural program.

The Mexican outlook in agriculture is a bright one and will contribute in a significant way to place Mexico in a much better situation than the current one.

Background Information

In 1992, the agrarian law, basic framework of rural life, was modified. Article 27 of the constitution was amended to provide both the peasants and private farmers with legal certainty of land ownership.

This amendment represents the first major change in the new structure of the agricultural sector.

Currently, the "ejido" or common land ownership are allowed to associate among them and with others, increasing social welfare, productivity and feasibility to embark in large and ambitious projects.

This new law permits efficient resource allocation and fosters conservation of natural resources.

Law of National Waters

The law that regulates water use was amended as well in early 1993, to complement the land tenure act, in an effort to go full circle in providing the rural sector with the appropriate platform to modernize it and become competitive.

In 1993, a federal program called **Procampo** which consists of direct payments to the grain producer (in substitution of subsidies in fertilizer, electricity, credit, insurance, etc.). **Procampo** was implemented in an effort to compensate for market distortions and assist the producers in their efforts for structural change.

Some of the **Procampo** characteristics are:

- Direct payment per hectare
- Decoupled from production
- Fifteen year duration
- Fixed in real terms

Who is eligible?: agricultural areas that have been cultivated with maize, beans, wheat, sorghum, soybeans, rice, cotton, barley and safflower during the last three years (1990-1993).

Land can be dedicated to any productive or ecological activity and still gets payment.

Such a program allows the use of the **Procampo** payment as collateral, it has a specific present value that can be negotiated at the market and promotes capitalization in the sector.

At the same time that some of the above changes were taking place, Mexico was preparing to play a new and radically different role in the global economy.

In 1992, Mexico joined GATT (now world trade organization) and in January of 1994, joined Canada and the U.S. to form the **NAFTA** block, a three way free trade partnership involving over 360 million people.

Mexico continues to keep its policy of free trade and has subscribed agreements with countries such as Chile and Costa Rica and soon will come to terms with other Latin American nations as well as with the **European Union** and the **APEC** (Asian Pacific Economic Community) countries, which Mexico is part of.

Such world wide agreements will allow Mexico to diversify its markets and to target specific products to individual countries giving a wide range of commercial options to the farmers.

In the present administration, president Zedillo has put together a multisectorial working group at the minister level to make an objective diagnosis of the agricultural sector and to draw up a

game plan to rescue the rural sector and to bring back farmers welfare, profitability and competitiveness to the activity.

The result of such working group is alliance for agricultural development.

The objectives of this program are:

To increase the net income of producers, to reach a level of production that equates and surpasses population growth, to correct the trade balance of the agricultural sector, to fight rural poverty and to offer the urban population enough food for nourishment as well as quality products.

This past year has undoubtedly been a very difficult one for the Mexican economy. Many adverse factors merged to cause Mexico's pace for development to stumble, but the profound economic reforms and open political dialogue have been fruitful as some of the macroeconomics indicators show. These signs put us back on the path for economic growth.

Coupled with the negative economic environment, a series of factors contributed to make 1995 a very tough year in the agricultural landscape.

Price increases in the basic outputs, like fertilizer that went up by 50%, tractors and agricultural machinery, went up by 80%, among other financial difficulties like high interest rates and shortage of credit; topped by a bad year in terms of rainfall and weather related catastrophes (Roxanne & Opal).

Almost 70% of the Mexican territory suffered from irregular rainfall, with extreme drought conditions in the northern states and violent storms in the southeast.

Despite such adverse conditions, migration from the countryside to the cities was halted, due in part to the expectations of better conditions and the return to profitability in the agricultural sector. By stopping migration to urban centers, the rural sector contributes in a significant way to improve social conditions.

If we take a look at the cultivated areas in the past year, the numbers are similar to the numbers in 1994; harvested area actually increased by 3%.

The alliance represents the result by consensus of farmers, cattlemen, producer organizations, peasants, etc. Every action has been initiated in the context of the alliance, it is not a lip service program, it is the end product of a serious and objective analysis and diagnosis of the agricultural sector, the result of a plural and open dialogue, all inclusive, that will contribute to the social welfare of the farmers.

Alliance for agricultural development gathers the social demands of the rural producers, with a vision to correct the current situation of poverty that millions of Mexicans live in, but with a futuristic vision to achieve a structural change that becomes an important source in job creation, growth and sustained development.

The **alliance** constitutes the main instrument of the producers to improve the agricultural consolidation through productivity and capitalization, in the context of achieving broader economic efficiency and social equity goals.

The upward trend in the international prices of most commodities, the adjustments in the exchange rate of the peso and the marketing strategy of agricultural goods set by the federal government, gave as a result a scheme of prices that benefits the net income of the producers.

From January 95 to January of this year, average prices for the producer have increased; just four examples to show this fact, average price of corn increased by 105%, wheat 102%, sorghum 129% and that of barley 103%. All of the increments way above inflation levels of last year.

These higher prices for the producer, for such items as those mentioned above, are considered as of high impact, since nearly 70% of the arable land is cultivated with these crops. The prices have grown faster than the inflation rate, bringing back profitability. That was the first major change.

The second major change has been the production reconversion to more profitable crops. There is a fairly solid basis to reconvert as a consequence of better market information as well as participation in global markets.

I would like to mention three examples: cotton production, for years a crop of the past, grew 83%, safflower grew by 78% and sesame seed, by 150%. Something very similar happened with vegetables and legumes.

These tendencies to achieve a structural recomposition became evident with an increase close to 10% in the harvested area for vegetables and perennials, whose production rose 24% in 95 compared with 94. I would like to highlight the cases of the tomatoes, which rose 40%, green peppers, rising 37%, and sugar production, rising 15%.

The surface harvested of the main products grew by 18% with production increases above 20%.

The third major change is the rise in agricultural exports. The exchange rate generated favorable conditions for exports and for the first time in many years, Mexico had a positive trade balance regarding agricultural goods. Our trade surplus reached 770 million dollars.

Products like cotton grew in exports by 302%, coffee beans by 96%, wheat 390%, chick-peas 63.90%, tomato 48.42%, livestock 46.43%, strawberries 39.19% and others like industrialized honey, coffee extracts, orange juice, pineapple juice to name a few.

The main livestock products; beef, pork as well as poultry products, all of these experienced growth with the exception of raw honey, eggs and goat meat.

Poultry output rose 19%, milk production rose 5%, sheep and pork grew 4% and 3% respectively.

Starting 1996, the alliance will become the detonator for agricultural development, why.

The program was conceived mainly by the producers to fulfill their needs, it incorporates elements to support productivity and competitiveness as well as procedures that have proven effective in other countries.

State governments and producers will operate the programs through **state agricultural councils**, that will manage financial resources and will provide the production guidelines.

State agricultural councils will be responsible to establish the criteria in their respective state in an all inclusive pattern, given the state agricultural development plan. The financial resources included in the agreement will be administered by a trust fund with development bank (Banrural).

Coffee

Coffee, due to its social implications and given the large margins for increase in productivity, coffee is a priority.

This year alone, we will aide in the renovation of 7% of the coffee plantations, aside from planting 112 million trees, the goal is to plant 700 million in a five year span.

With such strategy, output will from eight quintals per ha currently to a range of 15 to 20.

Such actions can increase our production as to become the third most important coffee producing country in the world.

As of today, 20% of all imports of agricultural products are oilseeds, which is the reason why the program includes the production of greenhouses to transform land to grow 400 thousand ha. This program represents 55% of the current area dedicated to this crop. This is an effort to depend to a lesser extent on imports. The Mexican market is large enough to justify such a grand scale project.

An issue of great interest to Mexico, is the sanitary and phytosanitary standards the regulate agricultural goods to flow with ease across border limits, by taking into account the four basic principles stated in the world trade organization as well as NAFTA: good sound science, reciprocity, transparency and equivalence, therefore expecting the same treatment.

We have a long standing tradition of complying with our obligations and on a day to day basis we ratify our commitment to NAFTA, since it has proven that trade has increased in the three countries. Mexico has moved expeditiously to clear the way for products of both Canada and the U.S., such as peaches, apples, citrus, potatoes and Christmas trees, therefore expecting the same treatment for Mexican goods going to either Canada or the U.S.

NAFTA is a child born with good genetics, we believe , but it's just learning to walk and requires a lot of nourishment.

Advocates believe it will increase employment in the three countries because it stimulates economic growth and generates additional trade.

Critics warn about industry relocation stimulated by lower labor cost opportunities in Mexico and surges of exports of fruits and fresh vegetables that will damage the market position of groups of producers in importing countries.

Because we believe in the positive impact of NAFTA on economic development, we see the future trade trends based on the assumption of economic growth.

Growth of trade between Mexico and our NAFTA partners will depend basically on economic development and per capita income in Mexico.

Economic growth in Mexico will increase demand of products like apples, peas, peaches, potatoes and others that will represent a growing market for the U.S.A. and Canada. NAFTA deregulation will increase demand and imports of high quality horticultural produce from Mexico whose higher level of domestic consumption will compete with exports. Total production volume will come basically from increased productivity given the limits in land and water.

In relation to grains, economic growth will increase Mexico's need for more imports of grains and oilseeds both for human consumption and for livestock feeding, that can only be moderated by increased productivity in domestic production.

Meat and livestock imports to Mexico will grow with per capita income. Higher productivity of Mexican cattle production in northern regions will generate more exports of live cattle to the north, and we will start exporting high quality processed meat products. Consumer preferences in the two markets, the U.S. and Mexico, offer a splendid opportunity of

complementation that it is today prevented by restrictions on Mexican exports that should be removed if NAFTA commitments prevails.

Dairy products will be imported by Mexico even when the country is committed to increase domestic production at 10% annually. Today Mexico is the largest buyer of LPD in the international market, imports 35% of domestic consumption of milk. Economic growth will result in higher per capita consumption and shift in demand to elaborated higher quality products. The country has the natural resources and national commitments for the objective of reducing from 35% to 10% of consumption the share of imports in five years.

Thanks.

BUILDING PROSPERITY WITH U.S. TRADING PARTNERS

August Schumacher, Jr.
Administrator, Foreign Agricultural Service, USDA

Building prosperity with American trading partners ... fostering trade through international cooperation. Political sloganers might argue that these are *not* the most compelling themes to emphasize in a U.S. presidential election year.

Building prosperity with American trading partners is to continue building a foundation for world stability, peace, and food security ... a foundation whose blocks were laid in 1954 with P.L. 480 and the beginnings of the Foreign Agricultural Service. Fostering trade through international cooperation means new opportunities for producers and wider choices for consumers.

The United States recognizes its responsibilities as a leader in the international community; we understand the connection between national and international interests in trade and economic development. We are an outward-looking nation, a trading nation, a nation with a long tradition of assisting developing countries.

In agriculture certainly, one need not look very far to grasp the relationship between U.S. trade prospects and economic conditions abroad -- how quickly foreign trade opportunities can blossom when a major trading partner experiences rapid economic growth and, similarly, how quickly trade can stagnate when another trading partner experiences economic difficulties. U.S. agriculture today is inextricably linked to the global economy.

Today, the need for cooperation in promoting economic growth through expanded trade is greater than it has ever been. Fostering trade growth and building prosperity with U.S. trading partners is in our interest and the world interest.

In my remarks, I want to focus on three key policy areas as they relate to the changes and challenges in global agriculture -- the direction of U.S. domestic farm policies, the U.S. role in international trade policies, and the U.S. commitment to food aid and development.

Producing for the Marketplace

Although the new American farm bill is not yet finalized, the direction of U.S. agricultural policy is clear. The U.S. government role in agriculture is being reduced. U.S. producers

will have more freedom and flexibility to make their own production and marketing decisions so they can respond quickly to market signals, compete successfully, and play a larger role in meeting global demand.

The United States is committed to remaining a reliable, predictable supplier of food to our trading partners. Secretary Glickman has already taken several steps to ensure that more U.S. grain will be available to the market, announcing zero ARP's for wheat and feed grains, an early-release option for eligible land in the Conservation Reserve, and the authority to release wheat, if necessary, from the U.S. Food Security Wheat Reserve. The Secretary has also pledged that the U.S. government will not restrict exports, even with the tight grain supplies.

Some of our trading partners have chosen a different direction, imposing export restrictions. We believe the European Union's export taxes set an unfortunate example. There are other cases, in Eastern European and elsewhere.

We believe that export restrictions, even when they benefit U.S. trade, are a bad idea. They can distort normal trade flows as much as import restrictions. They raise the cost of products to importing countries and are especially harmful to low-income countries that depend on the world market. For every \$10-per-metric-ton increase in the price of wheat, nearly \$1 billion is transferred from importer to exporter countries. Developing countries account for roughly 70 percent of world wheat imports.

As we shape U.S. farm policies to new global realities, we also want to encourage other nations to move ahead with market-oriented reforms in their domestic farm policies. Many are already doing so.

Canada, for example, is looking at its farm programs and moving toward a whole-farm safety net approach, with less government intervention. Mexico is proceeding with its Pro Campo program to assist Mexican producers in making the transition to freer markets. China, which has borrowed more than \$10 billion from The World Bank for agricultural development, recently announced renewed efforts to foster investment in food production.

In the United States, our objective is environmentally sound farm policies that permit U.S. farmers and ranchers to produce for the market and respond to demands generated by growing populations, rising incomes, and changing diets ... policies that permit U.S. producers to compete in world markets ... policies that maintain the high-quality image of U.S. products ... and policies that will help ensure global food security in an environment of fair and freer trade.

The value of world agricultural trade (excluding intra-EU trade) is approaching \$250 billion and is steadily growing -- particularly in the case of high-value products, which make up the bulk of that trade. The U.S. share of this total is now estimated at about 23 percent, up six

percentage points or more than one-third since 1986.

Clearly, growth in trade is in the world interest, and it is in the U.S. interest as well. We are an outward-looking nation, and U.S. domestic farm policies will reflect that outward orientation.

U.S. Role in International Trade Policies

U.S. trade policies obviously go beyond ensuring that we remain a reliable supplier to world markets. The last few years have been historic in terms of changes in the world trading system. Nations around the world are accepting the challenge to increase market access, reduce tariffs, and liberalize trade.

American farmers benefit, as do the more than half-million nonfarm workers who earn their incomes handling and processing agricultural products for export. The United States is now exporting more than \$1 billion worth of food and fiber products per week.

The Uruguay Round agreement and the new World Trade Organization (WTO) represent important first steps in reforming the global trading system, opening markets, and establishing new rules for fair trade -- building new institutions to support and encourage cooperation and growth in trade for the next century. We believe that trade reform is the key to improving economic growth. Free trade stimulates competition, helps gear production to demand, increases employment, boosts investment, and bolsters economic growth.

All members of the WTO have a responsibility to fully implement their commitments and faithfully observe the new disciplines. One area of increasing concern is sanitary and phytosanitary restrictions. We intend to continue working with our trading partners through the WTO and bilaterally to address these concerns and to ensure that such import restrictions are based on sound science.

Building prosperity with our trading partners means a shared commitment to trade liberalization and new trade rules; it means reciprocity; it means not just freer trade, but fair trade. There is a lot of work ahead, including efforts to bring nations ready to accept these commitments into the global trading system. For example, we are looking forward to the accession of China and Russia into the WTO and are working with both countries to develop commercially viable accession packages.

Fostering trade and economic growth also involves many other bilateral and regional efforts toward greater cooperation, closer relations, and freer trade. NAFTA is one important example in this hemisphere, and we have all three members of NAFTA represented on this panel.

We are pleased by the progress we have seen under the NAFTA. In agriculture alone, two-way trade with both of our North American trading partners has increased by nearly 20 percent since 1993, the year before the agreement went into effect. U.S. agricultural exports to our two neighbors in fiscal 1995 totaled a record \$9.5 billion, including \$5.8 billion to Canada and \$3.7 billion to Mexico. Although 1995 was a difficult post-peso devaluation year for Mexico and our agricultural exports dropped from 1994 levels, they were still higher than they had been in any fiscal year before NAFTA.

As trade has expanded under NAFTA, some frictions have naturally developed. But NAFTA has also facilitated efforts to deal with trade issues that arise. The recent report of the U.S.-Canada grains commission, for example, will be useful to both our governments in dealing with a difficult issue.

Also within this hemisphere, work continues on the Free Trade Area of the Americas, or the FTAA, proposed by President Clinton at the Summit of the Americas in December 1994. Countries throughout this region have agreed to complete negotiations on hemispheric free trade by 2005. An FTAA Ministerial will be held next month in Colombia. I might note here that Canada chairs the working group on standards, and Mexico chairs the sanitary-phytosanitary group. We appreciate the good work in these areas.

Another very important initiative has been undertaken through APEC -- Asia-Pacific Economic Cooperation. APEC has embarked on a very ambitious agenda for establishing free trade among the broad Asian-Pacific community of nations, including all four nations represented on this panel.

Last November in Osaka, the leaders of APEC nations committed themselves to trade liberalization in all sectors, including agriculture, and set out an agenda to achieve these goals. We expect these commitments to be fully reflected in the action plans that APEC members are now developing to proceed on this agenda.

Global trade reform is still in its early stages, and there is a long way to go. New issues are emerging that require a cooperative approach, such as the trade treatment of the products of biotechnology. New developments in biotechnology have the potential to increase food production, lower farming costs, improve food quality and safety, and enhance environmental quality. However, these benefits for both farmers and consumers will not easily be realized without greater harmonization of trade policies. The introduction of bio-engineered foods into international trade is a challenge, and we will all need to work together on these issues.

Let me quote briefly from a speech made by Under Secretary Gene Moos last month in Oxford, England. He said: "Today, we're facing a rapidly changing agricultural situation throughout the world. Given the continuously expanding import demand in Asian markets and the economic growth in developing countries ... we're moving away from a world surplus

situation to an era of growing demand."

He went on to say: "The Uruguay Round was crafted during a period of surplus production and intense competition for markets. Now, we are facing a different kind of challenge. In a sense, we are today where we were hoping to be five or so years down the road with the Uruguay Round reforms. The tight supply-demand situation provides an opportune time for market-oriented policies."

We believe that open markets and expanded trade offer the best and surest ways to global economic growth and food security. We intend to continue to champion trade liberalization initiatives -- to work with our trading partners in reducing trade barriers, promoting fair and free trade, and ensuring that the opportunities and benefits of trade are open to all. We are an outward-looking nation, and this is in our interest and the world interest.

U.S. Commitment to Food Aid and Development

Although we believe prosperity and food security are best assured through freer trade and market-based incentives, there will always be those in need of assistance. Just as the United States has a strong commitment to domestic food programs for those in need -- this year's appropriation for domestic food and nutrition programs is nearly \$40 billion -- we also have a strong and serious commitment to international food aid and development assistance.

Today, global grain supplies are the tightest they have been in decades, and prices are substantially higher. At the same time, government-held stocks in donor nations are down, and food aid budgets are very tight. Last month, President Clinton authorized Secretary Glickman to release up to 1.5 million metric tons of wheat from the U.S. Food Security Wheat Reserve for emergency humanitarian food assistance. We intend to honor our current commitment to provide humanitarian aid to developing countries that cannot produce or buy enough food to meet their needs.

The problem of chronic hunger and malnutrition will be the focus of the FAO-sponsored World Food Summit in Rome this coming November. At the 50th anniversary celebrations for the FAO in Quebec last October, Secretary Glickman announced U.S. support for the summit. I am proud that the Foreign Agricultural Service is serving as the National Secretariat for the summit, coordinating all U.S. activities relating to the summit. We are working in close collaboration with the State Department, U.S.A.I.D., our farm groups, and NGO's, as well as other countries, in the preparatory work.

The Administration is also reviewing U.S. food aid and development assistance programs to make sure that available resources continue to be used in the most effective ways possible to support aid-dependent countries. The United States has a 40-year commitment to food aid through P.L. 480, and today USDA and A.I.D. together provide food assistance to about 80

countries, including countries that didn't even exist a decade ago. Private aid by Americans through religious, voluntary, and business groups is even greater than U.S. government aid.

Although the United States remains the world's major provider of food aid, others are now playing a more active role. The U.S. annual commitment to the Food Aid Convention is a minimum of 2.5 million metric tons -- the largest single commitment of any donor. We encourage both traditional donors and countries experiencing rapid economic growth to assist in this global effort. At the same time, the food-aid dependent countries must take more responsibility for ensuring their own food security by providing market-based production incentives and building reserve stocks when supplies are more plentiful.

The United States will continue to be generous in sharing and exchanging scientific and technical expertise with developing countries and other trading partners. USDA is involved in training, technical assistance, agribusiness development, and research and scientific exchanges with dozens of countries around the world. These programs have mutual benefits.

Earlier, I mentioned the importance of new developments in biotechnology, and I cannot underestimate the critical role for science and technology generally in meeting future world food needs. Look at the production impacts of the green revolution in India, which were so evident during my visit last month. Contrary to those dire predictions of the past, production has far outstripped growth in population and demand. India has worked hard, buttressed by good monsoons, and now has around 30 million tons of grain reserves. Much of that is due to years of cooperation in the international scientific community, including U.S. research institutions.

Programs such as the U.S.-China scientific and technical exchange agreement show the positive impact that cooperation between two nations can have on the development of world agriculture. Since 1978, more than 900 scientists on both sides have participated in the U.S.-China Scientific Cooperation program. This program has benefited both of our countries through the exchange of agricultural materials and technical information in the areas of biological control, plant genetics, soil conservation, and agricultural data.

Before closing, I also want to emphasize our commitment to continued and expanded support for the work being done in emerging markets. Our fastest growing agricultural markets are those countries where The World Bank and its sister agencies have active lending programs. These agencies play a vital role in strengthening markets and economic policies in emerging markets -- countries such as Indonesia, China, the Philippines, and Brazil. All of these are now emerging markets for U.S. agriculture.

Conclusion

I would like to conclude with a mention of Gwynn Garnett. You may not have heard of him, but he was one of the true visionaries in U.S. agricultural policy. After combat service in World War II, he took charge of the U.S. military government's effort in Berlin to feed hungry Germans. Later, he brought his ideas about feeding hungry people back to Washington as a Farm Bureau official, becoming one of the movers and shakers behind the P.L. 480 program and the Eisenhower administration's efforts to boost exports. He was also one of the first administrators of the Foreign Agricultural Service, where he continued to pursue an ambitious export agenda.

As it turns out, these were watershed years for U.S. agriculture. We might have circled our wagons and pointed them inward, turning our back on the world. There were many voices urging us in this direction. Fortunately, our leaders chose to look outward, to world markets and global obligations. This decision is at the very core of why agriculture is such a powerful economic force in the United States today -- and why U.S. agriculture plays such a major role in the world.

Gwynn Garnett died a few months ago at the age of 85. But his vision lives on. Looking toward global markets and working with our trading partners to build prosperity are not new ideas to us. This is in our interest. It is in the world interest. In our domestic farm policies, in our trade policies, and in our aid and development policies, we are and intend to remain an outward-looking nation.

Remarks for Eugene Moos
Under Secretary for Farm and Foreign Agricultural Services
U.S. Department of Agriculture
at the USDA Agricultural Outlook Forum
Washington, D.C.
February 21, 1996

Linking Domestic Policies and Trade Goals

Good Afternoon. I am pleased to have the opportunity to meet with you at our annual Outlook Forum. Each year this event gives us an excellent reason to set aside the time to take stock of where we've been in the past year, where we are going, and perhaps most important, where we would like to go.

I am sure that when the conference planners were working on the agenda for this meeting, they thought that by February 21, we would surely be discussing how we were implementing what should have been the new 1995 Farm Bill--not still debating the 1996 Farm Bill. At least, I hope there will be a 1996 Bill!

So, this afternoon, rather than outlining a new piece of legislation and its impact, let me focus on the underlying goals and priorities of this Administration for the Farm Bill and why sound domestic farm policy is so critical to meeting our international trade goals.

Today, you've heard a lot about the general agricultural outlook, the overall export picture, trade policy issues, and factors affecting some of our key trading partners. As the Secretary announced, we are looking forward to an extremely good year for American farm exports -- maybe as much as \$60 billion, or up about 10 percent from 1995. In other words, our farm sector should enjoy another record-breaking year, building on last year's sterling performance.

U. S. Agriculture's Competitiveness in World Markets

It's important to note in the context of today's discussion of farm policy, that U.S. agricultural exports have more than doubled since the 1985 Farm Bill -- a law enacted in large part to reverse declines in U.S. agriculture's global competitiveness with more market-oriented farm policies and new export programs, such as the Export Enhancement Program and the Market Promotion Program.

Agricultural exports really are the success story in the U.S. trade picture. 1995 marked 36 straight years of agriculture trade surpluses -- in stark contrast to the deficits in non-agricultural trade. The U.S. agricultural trade surplus jumped from \$17.1 billion in FY 1994 to \$24.6 billion in 1995. This was the second largest surplus ever and a major recovery from 1986 when it looked like the surplus was about to disappear.

Not only are we the world's largest exporter, but we are the world's most improved competitor. Overall, the U.S. share of world agricultural trade reached 23 percent in 1995, the highest level in over a decade. This makes the United States the leading agricultural exporter in the world with a growing lead over our largest competitor the European Union. In fact, since 1985, the U.S. share of world trade has grown more than that of any other exporting nation.

The export success of 1995 reflects growth in a broad diversity of customers and products. Exports were up in eight of 1995's top ten agricultural markets. In seven of them, exports hit record levels. Exports to our No. 1 buyer, Japan, topped \$10 billion for first time. Records were also set in other key Asian markets, including Korea, Taiwan, China, and Hong Kong. China registered the most impressive growth, as U.S. agricultural exports there increased 175 percent to \$2.4 billion.

The results were equally impressive on the product side. U.S. sales were up in all three major categories of agricultural exports -- bulk, intermediate, and consumer-oriented products.

U.S. Export Goal

This is especially encouraging because in 1994, we established a goal of increasing U.S. exports by 50 percent -- or \$21 billion -- by the year 2000. Based on some of the numbers I've shown you today, we are well on the way to meeting that goal. If we reach this year's export projection of \$60 billion, we would already be ahead of where we need to be to reach our goal of \$65 billion by the year 2000.

Let's take a look at what a 50-percent increase in exports would do for our rural economy.

--It would mean a projected 13-percent increase in net farm income.

--It would mean tens of thousands of more jobs on the farm and in surrounding rural communities that need those jobs -- good jobs in processing, packaging, transportation.

--It would also mean that U.S. agriculture would be more dependent than ever before on exports to ensure our prosperity.

Improving productivity, slow growth in domestic demand, and the likelihood of reduced government supports would most likely add to the trend. Today, agriculture's overall dependence on exports as measured in terms of gross cash receipts is estimated at 23 percent and rising. Our goal of a 50-percent increase in exports, reaching \$65 billion by the year 2000, would have exports accounting for 31 cents of each farm dollar.

This makes agriculture one of the most export-sensitive industries in America. While the overall economy's reliance on export markets is also growing, it is far less, with overall exports accounting for only 11 percent of the nation's gross domestic product in 1994. By 2000, this figure is projected to reach 13 percent. The bottom line is that American agriculture is currently twice as dependent on international markets as the economy as a whole and will be two-and-a-half times as export-dependent by the turn of the century.

Agriculture's future prosperity clearly lies with an expanding export market. In just the next 60 minutes, around \$6 million in U.S. agricultural products -- grains, oilseeds, cotton, meats, vegetables, snack foods, you name it -- will be consigned for export to foreign markets. That's what this nation's producers and processors export, on average, every hour, 24 hours a day, 365 days a year.

Here at home, we have roughly 260 million consumers and a relatively mature market that is already dominated by U.S. producers and food firms. Beyond our borders are another 5.5 billion consumers, including hundreds of millions who are not only attracted to U.S. products but have the incomes to afford them. World population is growing by 90-95 million a year -- every 3 years, that's more new mouths to feed than the entire U.S. population.

International markets are where the action is -- where rapid growth in demand can help sustain a strong and prosperous U.S. food and agricultural sector, with all the economic and job-creating benefits that accrue from that growth. Export growth is the key to stronger farm incomes in the years ahead.

Global Changes

Today, we are doing business in a time characterized by dramatic change. That change is reflected in our current agricultural situation with its extremely low stocks, strong demand and high prices and also in the world trading environment. Trade barriers are falling and market liberalization is sweeping the globe. We are now competing in the most open global economy of this century. Newly privatized markets are emerging from the collapse of the socialist economies. Outdated policies of self-sufficiency, protectionism, and government control of markets are being challenged, reformed, or dismantled in Latin America, Asia, and even Europe.

Thanks to the Uruguay Round Agreement, countries now need to open up their markets, many for the first time. Japan and South Korea, for example, have opened their long-closed rice markets to imports. Export subsidies are being reduced, and the European Union -- as the world's largest subsidizer -- faces the largest cuts.

Internal support measures that distort trade are coming under new disciplines. New international rules set a scientific standard for sanitary and phytosanitary measures that restrict imports, so that countries cannot so easily engage in trade protectionism by citing unjustified health and safety concerns about imported products.

Just as negotiation of the Uruguay Round Agreement was a tremendous job, our current implementation stage is just as challenging--perhaps even more so. But we are focused on this effort because we know that U.S. agriculture should benefit substantially from increased access to markets and fairer trade competition. The benefits will multiply over the longer term because open markets and expanded trade in agriculture and other areas will mean stronger world economic growth and higher incomes, thereby increasing global demand for agricultural products.

However, along with the increase in opportunities comes a new set of challenges, because the same market opportunities are now available to other producers throughout the world. Just about anywhere you look around the globe, our competitors are gearing up to take advantage of growing global trade and we need to meet this competition head on.

This is not the time to relax our trade policy and market development efforts. This would unilaterally hand over the opportunities we have created to our competitors, as they intensify their export efforts and retool their programs for the new competitive environment.

Prospective New Farm Legislation

This is the time to ensure that the new Farm Bill provides the kinds of domestic and export programs that support a vibrant agricultural export trade.

The Bill that was passed by the Senate two weeks (S.1541) ago does not address all of the Administration's concerns.

One of the things anyone involved in agriculture has learned is that in order to succeed, you have to think long term. Sustainable market and export growth is a long term proposition. So, too, are the domestic policies we enact in support of these goals.

In that context, I believe we need to carefully examine prospective new farm legislation in terms of our overall policy objectives -- and particularly in terms of how well it supports or complements our ability to take advantage of demand and export growth worldwide.

I think we can safely assume that the "Freedom to Farm" approach in some form will be the basis for new farm policy. Even with modifications and improvements the Administration will be seeking, we're looking at a dramatic departure from our current programs, and from the policies in place for the past 60 years.

Many of those policies are obviously due for a change. Farmers must be able to respond to the fundamental transformation we're seeing in world markets, and we've consistently supported increased planting flexibility in new farm legislation.

But there's a simple reason we need a federal farm program: food security. Security for producers, consumers, and users here at home, and the security that we will remain a reliable supplier to our growing customers overseas.

In this new world of rapid change and expanding opportunities, we need a market-oriented farm policy. It's time to evaluate, with our eye on the long term, whether the Freedom to Farm approach is the best way to go about it.

Policy Principles

Throughout the farm bill process, the Administration has stressed certain priorities that we believe good farm policy should meet:

First, it should preserve a responsible safety net for farmers.

Second, it should support a strong, competitive agricultural sector and make needed investments in rural infrastructures.

Third, it should protect our natural resource base, maintain the gains we've achieved in agricultural conservation, and provide economic opportunity for farmers and rural residents.

Safety Net Concerns

We continue to have reservations over whether a system of fixed, guaranteed payments provides a responsible safety net. Prices are high now, and demand is strong and growing. A guaranteed payment under these circumstances looks pretty good to many farmers. As a long time wheat farmer, I can appreciate that.

But over the long term, we know markets and prices go up and down. Safety nets are needed during the low price years. Agriculture is an unpredictable business. We know situations can change rapidly -- they can strengthen or deteriorate because of weather, or because of some unforeseen political or economic occurrence halfway around the world.

Right now our expectations are high; I'm very optimistic about our trade and market outlook. But we can certainly expect some ups and downs over the next seven years. To think otherwise is to ignore the long-term reality for the short-term fix.

Back in 1981, you'll recall, U.S. agriculture set an export record of \$43.8 billion. Five years later, in 1986, exports had plummeted to \$26.3 billion, precipitating painful dislocations in our farm economy. Higher levels of program payments helped many producers stay in business.

Farm programs, for all their faults, give producers confidence that they will not have to bear the burdens of the risks inherent in agriculture alone.

We would like to see the fixed payment plan altered to provide greater stability for farm incomes -- especially since it's inevitable that farm prices will fluctuate -- up and down.

Undermining the risk management program, as the legislation would do, also undermines the safety net. Congressional proposals would junk the crop insurance reforms that were enacted, just a year ago, with widespread bipartisan support.

Here again, we must look at the long term. As the role of commodity programs in the traditional farm safety net diminishes, producers will need to become more comfortable with alternative ways to hedge their price and production risks.

Eliminating the linkage now between crop insurance and program participation unnecessarily exposes producers to greater risk. It will set back our efforts to provide the management tools that will enable farmers to use futures and options and other marketing strategies with greater confidence.

Instead, we've proposed reforms that would eliminate the linkage requirement for producers with minimal loss exposure. Others would relieve paperwork and administrative burdens for many farmers. We're offering two new revenue insurance pilots this spring for corn, cotton, soybean and spring wheat growers in several states.

Stability Concerns

But our concerns -- and our questions -- go further. In terms of our trade objectives, being a reliable supplier is critical. If we can't meet our customers' needs, someone else will.

Under the prospective new legislation, there are no stock buffers, other than those held by the commercial markets, to offset any short crop situation. It does away with the Farmer-Owned Reserve, and government's role in stock holding or supply management would be essentially eliminated.

These factors add a measure of uncertainty and risk. By eliminating all stock holding, the Freedom to Farm approach guarantees more volatility in supply and prices than under our current system.

This year, for example, to meet our obligations for emergency humanitarian assistance, we're authorized to release up to 1.5 million metric tons, out of the 3.8 million currently in the Food Security Wheat Reserve. We're accessing the reserve because of the extremely low level of commercial supplies available for P.L. 480 under the existing legislative criteria.

We would want to retain the Farmer-Owned Reserve, but with additional reforms designed to maintain stable grain markets.

We're in general agreement with eliminating authority for acreage reduction requirements -- which have been used very sparingly in recent years. But given the volatility of weather and production, and global factors beyond farmers' control, we support standby authority for ARPs as a last resort when supply and demand are critically out of balance.

Export Programs

The Bill's trade title includes a number of provisions that are absolutely essential to maintaining the competitiveness of U.S. agriculture in the international market. It continues and considerably improves several export programs that have been so vital in helping American agriculture achieve record-breaking export levels. However, it also cuts funding for the Export Enhancement Program from the levels allowed under the WTO and cuts funding for the Market Promotion Program. These two programs have time and again proven their benefit in boosting U.S. trade. There are also a few other improvements that we feel need to be made in export provisions and we are hopeful that these can be addressed when the Farm Bill debate resumes.

Preliminary Analysis

Our analysis is, admittedly, very preliminary. The policy shift that Freedom to Farm would bring leads us into unknown territory in many respects.

On the negative side, it appears to substitute short-term gains for well-considered, long term policy objectives for agriculture. These objectives center on enhancing trade and market growth, remaining a reliable supplier in world markets, and maintaining a stable, prosperous, and resilient farm economy.

In that regard, Freedom to Farm may well confuse producers as they prepare for a more market-oriented future. In a sense, as we prepare to move into an era of less government protection, Freedom to Farm appears to step on the brakes at exactly the same time it is expected to help prepare producers to survive in a more market-oriented environment. It does this in at least two ways. First, through guaranteed payments, it discourages producers from developing the risk-management skills they will need in order to survive in a more market-oriented environment. Second, guaranteed payments could mute the market signals producers will need to respond to if they are to adjust their production to compete in an increasingly competitive world market.

On the positive side, Freedom to Farm appears to protect our natural resource base by reauthorizing the Conservation Reserve Program up to 36.4 million acres with authorization for new enrollments for environmentally-sensitive acres. It also would require producers to comply with highly erodible land and wetland provisions in order to be eligible for payments. And equally important, Freedom to Farm provides producers with the management flexibilities they will need in order to maximize their economic opportunities.

In conclusion, there is no question in my mind, that our new agricultural policy will form the foundation that this country will depend on to feed itself and millions of others for years to come. It affects consumers, our balance of trade, our investment in agricultural research, resources for millions of rural residents, and some of our most important, and successful, conservation programs.

No sector of the U.S. economy faces greater challenges or greater opportunities than agriculture. As the global economy expands, U.S. agriculture can move toward wide-ranging dominance of world markets or be forced to retreat in the face of growing world market competition.

The stakes are enormously high. We're talking about:

- Opportunities for growth in farm incomes that can keep farmers and ranchers in business and attract a new generation of young people to farming.
- Paychecks of close to 1 million U.S. workers whose jobs are tied to agricultural exports, and the creation of new high-wage jobs related to trade.
- The livelihood of hundreds of rural communities across the nation with economies heavily dependent on agriculture and agribusiness activities.
- The important contribution of agricultural exports and a vibrant farm sector to the overall U.S. economy and U.S. trade.

We cannot leave the future to chance. We cannot stand back and wait for the opportunities now emerging to fall our way. We cannot afford to ignore the new marketplace challenges and then try to play catch-up for what we've already lost.

We have long said that the best interests of agriculture--not just the budget, and protecting budget baselines--should drive the policy process. That has never been more true than today.

The need for a winning global export strategy for U.S. agriculture has never been more urgent. And, given the certainty of continued cuts in farm program spending, the arguments for domestic farm policies and export programs that support this global strategy have never been more compelling.

We face a number of serious challenges this year and in coming years -- challenges from our foreign competitors and challenges involving domestic policy priorities and budgets. One of the challenges will be to achieve greater coordination and cooperation with the legislative branch. The future of American agriculture depends on our ability to successfully meet those challenges and we look forward to working with the industry and the Congress to achieve that goal.

THE OUTLOOKING FARMER
or Lookout! He's a farmer!!!
Chuck Merja, National Assn Of Wheat Growers
February 21, 1996

NEAR TERM (96-97 Marketing Year)

For those few in the audience who don't believe in supply and demand, I think that maybe you ought to look at the world grains market. We are at record low stocks to use ratios in several grains and with respect to wheat the WORLD has used more than it grew 4/5 and 6/10 years!! Probably the only reason we are not at record high prices is that the system is not surprised by these comments and it has learned to run on much smaller supplies. We may see just how well the system runs if more severe crop problems develop this year. Nonetheless prices are strong - in fact I was at a local marketing club meeting a short time ago and a good friend said, "Chuck, I'd like to thank you for \$5.00 wheat."

I tried to be humble and deflect the praise, but he continued with, "And you'd better darn well take credit for \$5.00 wheat, because you are surely going to get credit for \$3.00 wheat!" So I'm here to say that I've been president of the National Assn. of Wheat Growers less than two weeks and we've already seen prices higher than any level in the last 15 years!! Not bad - huh? I find it hard to believe that we won't exceed those 1981 levels in the near future - especially if we don't see some moisture in the southern plains - soon. That leaves only the February 74 highs of \$6.45 above us - but they are a full buck higher. Can we get there? Who knows, but it surely will be fun to watch.

Volatility is going to be the name of the game. And that will be true to an extreme until the northern hemisphere crop is in the bin. The last couple days we have traded the possibility of precipitation 10 days from now in the southern plains, as opposed to actually getting some moisture. So we were down a dime yesterday and recovered a good share of that today. This wheat market has a hair trigger and the next six weeks or so are very critical.

Devices that have been used in the past to clip the tops off rallies are much less available today than in the past. In the past we wheat growers complained vociferously about any threat to the Export Enhancement Program, because it signaled that we weren't willing to compete for markets. We still need to keep that EEP gun loaded, but we haven't used EEP since July and prices have risen steadily. The same with credit programs - we still need them, but right now importers are paying full price and paying cash. In fact, of the top 15 customers for US wheat all but 2 are cash buyers. And unlike some past occurrences of boom/busts, no one customer has taken even 20% of the total exports. Could this be real demand?

We have no sizable government held stocks that could be released. The US has four major competitors in the world wheat export market. Argentina generally sells everything that they grow and Australia tries to do the same. The latter does have some long term customers that they need to service, and they had a real poor crop a year ago, so they do not have large carryovers. They did cut a good crop this year and have said they will be aggressive with what they have. One of the two other major competitors has put on an export tax, in an effort to protect stocks and the other has indicated that it will commit less than in previous years to its traditional customers. So while there is still competition in the world wheat market, there is not the cutthroatness of just a year or two ago. And the US is a market that is open for business -

that's good!! In fact, when Secretary Glickman came to the wheat growers meeting just 12 days ago, he said two things that I think are very significant for wheat producers. First, there will be no embargoes on his watch and second, the wheat market may finally be reaching equilibrium. The first statement received large applause and deserves further praise. He doesn't have a lot of choice though in that a non-national security embargo would require loan rates to go to 90% of parity, which if my arithmetic is correct is more than three times the current loan rate - and nearly double even current market prices. As to the wheat market approaching some sort of equilibrium, I am thankful that we have a USDA that doesn't think we farmers need to carryover half a year's production, but as I said earlier, the market seems to be comfortable with even these carryovers, so maybe they are too high.

We wheaties have been operating for several years without an acreage setaside program - so there are no acres that can be easily accessed just by lowering an ARP. Of course there are some CRP early outs, but I think that the rules preclude any significant wheat acres headed for production this year - or maybe even next.

So short term the signals are bullish; however, producers are very skeptical of talk about new price plateaus at these prices. We have heard this before and we've had some real messes when we responded. As an example, about 1.5 years after the record high of \$6.45 wheat traded at \$2.40!! With the new farm program that we are looking at, even CBO prices mean less money in farmers' pockets over the life of the bill. And should we see prices below CBO projections, we could have real trouble in the farm sector. This is very troubling for those of us who make their living producing food and fiber for the country and the world, because it can cause some weakness in the US farm sector when other countries are still supporting their agricultural infrastructure.

LONGER TERM:

On a longer term picture, we see world demand growing, but wealth must grow with that demand if our wheat is to be purchased commercially. We need export tools to be armed and ready should attitudes in other countries change in such a way that US producers are forced to compete with other governments and their institutions.

Their are still trade barriers around the world that need to be addressed. A notable one from a potentially huge market is TCK smut restrictions in China. We are very pleased to see the unrelenting efforts put forth by USTR and USDA in this matter. When it is resolved, it will put the US in a position to compete with all classes of wheat, not just one. This will allow millers there to provide a much broader range of products to that growing market.

As wheat trade around the world becomes more privatized, relationships, quality and reliability will become even more important than they are today. We need to plan better than we currently are for those circumstances.

We need a much better plan than we currently have for CRP. One that protects critical habitat and our most fragile lands, while also allowing our most productive land back into production if the markets warrant. Farmers are the best decision makers with respect to these management decisions, but our hands are pretty well tied right now with rules for early out that don't work well in wheat country and without clear direction from Congress about the importance of a conservation program.

The crop insurance program in its current incarnation is a very poor tool for farmers. Many would like to be able to take advantage of these higher prices, but with crop insurance price elections and coverage levels the way they are, producers are actually adding to their risk rather than reducing it by making sales at current levels! There is little incentive to fix this program, because we just "fixed" it a couple years ago. But we must do so if we farmers are going to try and maximize our returns from the marketplace.

Currently wheat is sold only on morphology. As we move toward more open markets, this system will cause more and more problems. This is due to the fact that what is easy to measure isn't always a good measure of the performance of the product. We need to continue to pursue technology that will help us better characterize the value in the crops we grow.

As a partial answer to this issue, farmers have decided to try and capture some of the dollars to be made by adding value to their own products. This trend will continue especially in niche markets, but maybe even in direct competition (and maybe even cooperation) with some larger processors too.

Farmers are eager to participate in another trade record and hope we can address some of the structural issues that will allow us to set many more.

Thank you for allowing a farmer to talk about the outlook for agricultural!

INTERNATIONAL OUTLOOK FOR GRAINS AND OILSEEDS

Robert Riemschneider
Director, Grain and Feed Division
Foreign Agricultural Service
U.S. Department of Agriculture

I. INTRODUCTION

- This topic is perhaps too broad to cover in 15 minutes, particularly if we try to look out several years, but I will do my best to give you a quick overview of where we in FAS see these sectors heading in the international arena.
- The international outlook for grains and oilseeds is affected by many factors, but this presentation will focus on the broad underlying trends and trade impacts and hopefully set the stage for the presentations to follow.

II. STARTING POINT

- Grain and oilseed supplies are tight across the board.

(Show 1st chart: "Stocks-to-Use Ratio for Wheat, Coarse Grains, and Soybeans")
- Irrespective of production in 1996, global stocks are down so low that they will take a number of years to recover.
- This situation is not the result of an episodic factor, despite the poor U.S. corn crop and China shifting from a corn exporter to importer.
- Global utilization of grain has exceeded production for 3 straight years.
- This draw down in stocks is related as much to government policies as it is to market or technical factors. Governments took deliberate steps to shift production incentives from government-based to market-based. Meanwhile, governments continued disincentives to production. For example, EU set-asides and U.S. CRP and ARP.
- While this means that there is reserve productive capacity in the world, it also means that reduced government intervention will result in greater year-to-year volatility in

markets.

- In short, the current tight market did not occur as a result of one spectacular event, as happened in the early 1970s.
- Government policies had stock reduction as one of there objectives, but the rapidity and magnitude of the draw down we have witnessed was not anticipated.
- One reason stocks fell sooner and more dramatically than anticipated was the accelerated growth in demand for feed grains, particularly in Asia, which now accounts for nearly 50% of global feed grain trade. More on that later.

III. GLOBAL SUPPLY AND DEMAND OUTLOOK

- With stocks at historical lows, what are the prospects for the current tight situation getting better or worse over the next few years?
- One way to assess that is to look at the level of production needed to meet some benchmark utilization level, such as this years level of utilization.
- For example, just to maintain this year's level of global utilization of wheat and coarse grains in 1996/97, with no change in stocks, global production would have to increase by over 65 million tons, or about 5%.
- This production level is clearly possible, given production levels in past years and the reserve capacity in major producing countries.
- But, as we know, world utilization is not standing still, and this will continue to put pressure on global productive capacity in the long run. Let's take a look at the long term trends for grains and oilseeds.

(Show 2nd chart: "Wheat: Global Production vs. Trend Utilization".

- Wheat utilization since 1985 is growing at 6 million tons per year.

(Show 3rd chart: "Coarse Grains: Global Production vs. Trend Utilization")

- Coarse grain utilization since 1985 is growing at 7 million tons per year.

(Show 4th chart: "Oilseeds: Global Production vs. Trend Utilization")

- Oilseed utilization since 1985 is growing at 6 million tons per year, and is expected to

follow overall economic growth rates. Demand for soybeans remains strong as soybean meal remains the dominant protein source.

- Of the 3 commodities covered here, soybeans will face the greatest challenge in keeping up with utilization in the short run due to competition with corn and other oils for acreage, currently unfavorable corn/soybean price ratios, and increased demand for soymeal due to tight grain supplies.
- For 1996-97, some of the important things to watch are:
 - Weather in the U.S. Great Plains
 - Spring planting intentions in the Northern Hemisphere
 - Production response around the world to high prices
 - Growing conditions in major consuming countries, like China

IV. TRADE IMPLICATIONS

- Given current global economic growth forecasts, even with optimistic production forecasts, it seems certain that import demand for grains and oilseeds will remain strong for several years.
- This is most true for 1996/97, where even unexpectedly large global production would allow only modest stock rebuilding.
- The main difference between the tight market situation today and such situations in the past is that it is much more broadly based and demand driven.

WHEAT

(Show 5th chart: "Underpinning Wheat and Wheat Product Import Demand Steadily Growing")

- This chart shows that global import markets for wheat in other than the FSU and China have grown steadily.
- Trade developments in the FSU and China masked for many years what was happening elsewhere in the world.

(Show 6th chart: "The Key Markets Underpinning Wheat Trade Remain Heavily Dependent on Imports")

- This chart shows why this import demand is unlikely to weaken anytime soon.

- Other points of note about this chart:
 - Import growth of these "others" is 1.5 MMT annually.
 - China demand is in addition to this.
 - Growth is driven by income, urbanization, and diet diversification.
 - All regions of the world are participating in this growth, but Asia, even excluding China, dominates the growth.

COARSE GRAINS

(Show 7th chart: "Underpinning Coarse Grain Import Demand Continues Steady Growth")

- This chart shows a similar underlying growth in Coarse Grain import demand masked by developments in the FSU and European Union.
- All regions of the world are contributing somewhat to this underlying growth, but again Asia outside of China is the driving force.

(Show 8th chart: "Record East and Southeast Asia Coarse Grain Imports Reach 47% of World Total")

- This chart shows the significance.
- Again, any import demand by China is on top of this total in the future.

OILSEEDS

- Oilseed and product import demand has many facets due to the relationships between seeds, meal and oil and is difficult to summarize in just 2 or 3 graphs. But, graphs on soybeans, soymeal and total vegetable oils should give a reasonable overview.

(Show 9th chart: "World Soybean Imports Expected to Grow at a Modest Pace")

- For soybeans, major historical import markets are reaching maturity and consequently future growth should slow.

(Show 10th chart: "Soymeal Imports: Expected to Grow in Southeast Asia, but...")

- Soymeal imports are expected to grow in Southeast Asia, but the previous uptrend in the FSU has diminished and cheaper grain prices in the European Union and competition from Corn Gluten Feed will temper demand growth overall.

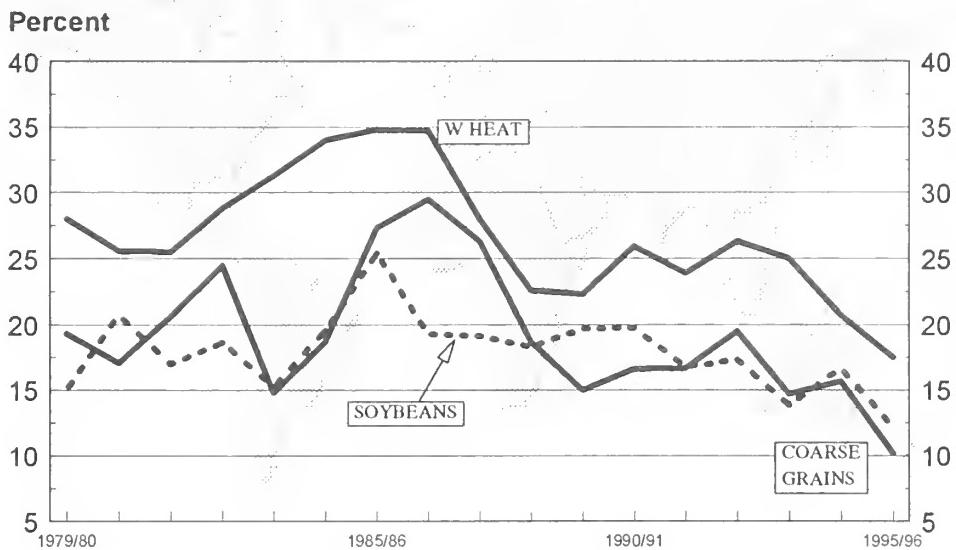
(Show 11th chart: "World Vegetable Oil Imports Expected to Maintain Historical Trend Line Growth")

- World vegetable oil imports are expected to maintain historical trend line growth. Accelerating imports into oil deficit countries such as China will be offset by only slow growth in developed countries where per capita usage is already high and population growth is low.

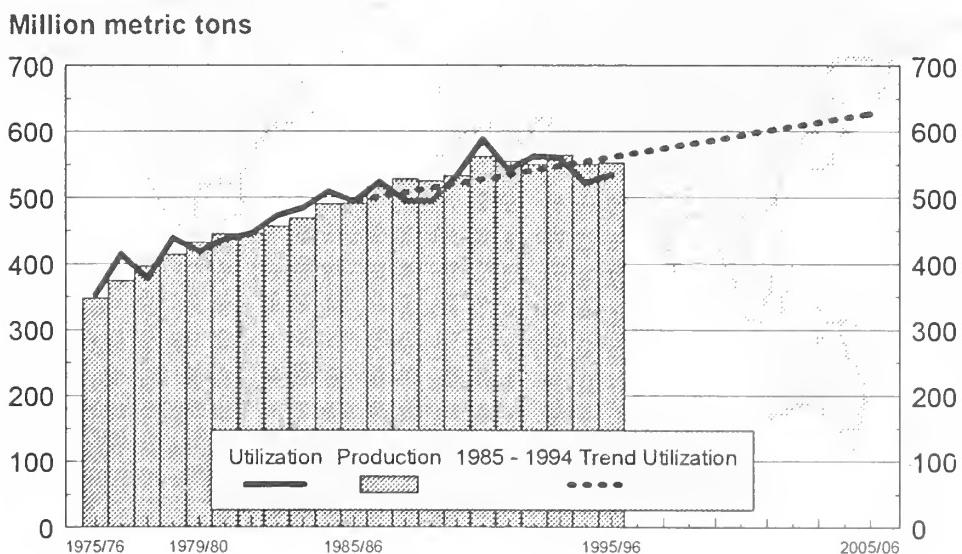
V. CLOSING

- In closing, I've tried to provide a broad overview of a broad subject.
- In summary, the current situation is tight and will likely remain so for a few years, but we are not in a critical situation. While global prices will remain higher and more volatile than in recent years, and farmers will likely see improved market returns, competition for markets will still be strong.
- Hopefully, this will give you a context within which the speakers to follow will provide their more detailed insights. Thank you.

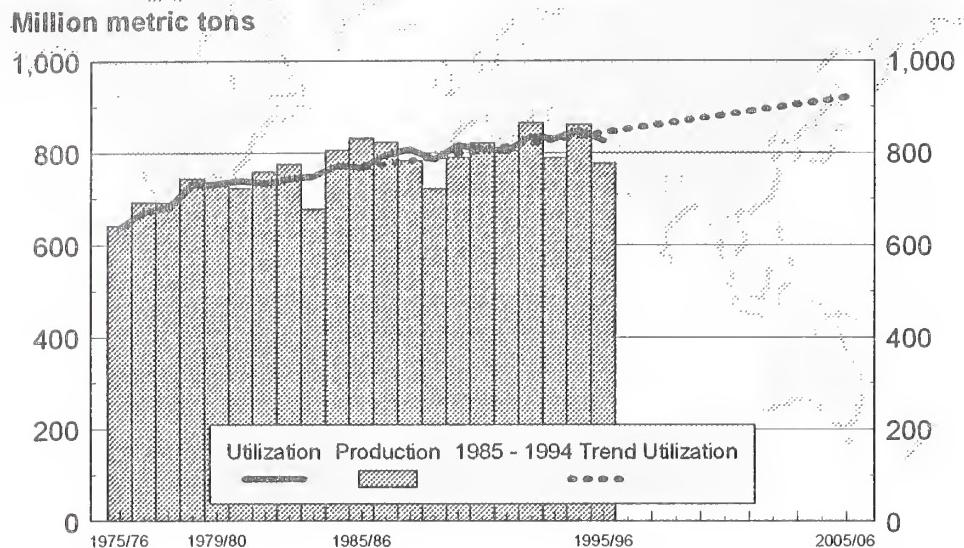
Stocks-to-Use Ratios For Wheat, Coarse Grains, and Oilseeds



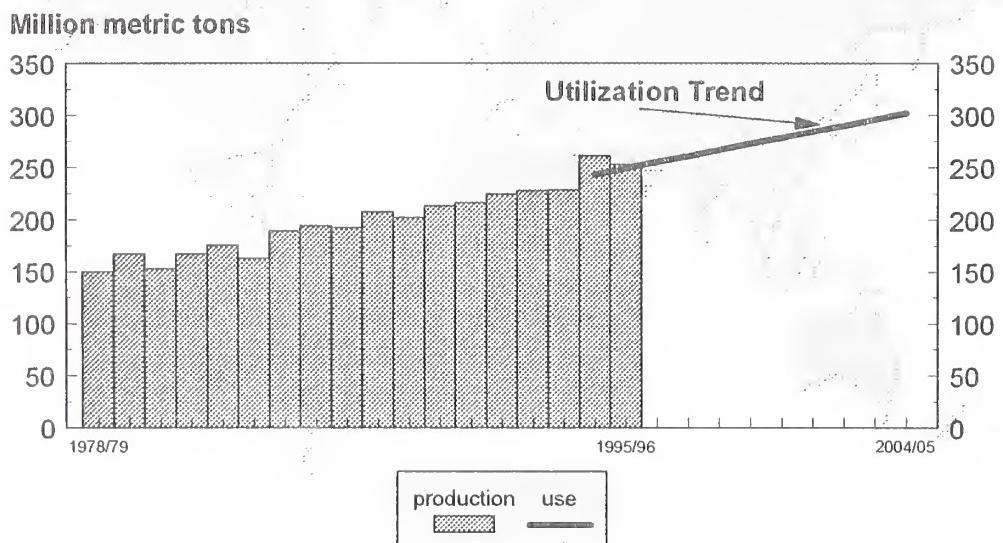
Wheat: Global Production vs Trend Utilization



Coarse Grains: Global Production vs Trend Utilization

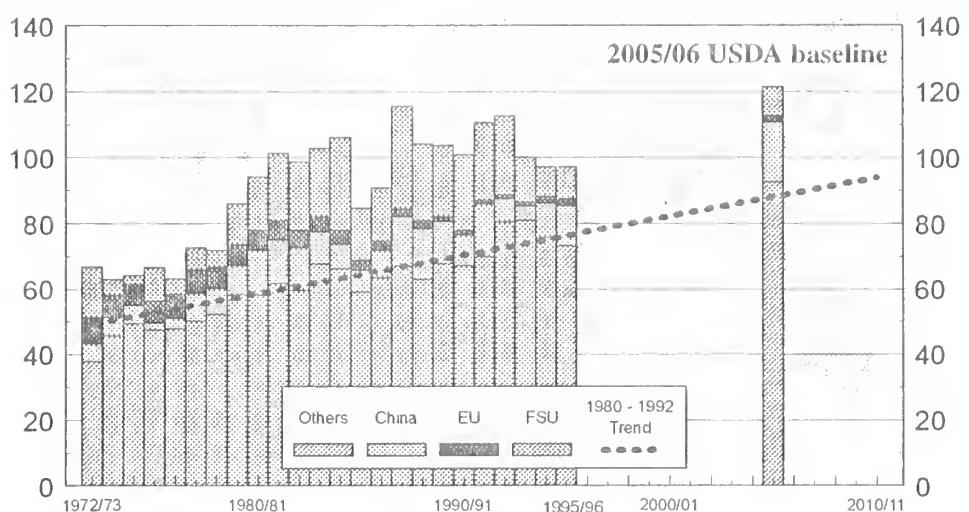


Oilseeds: Global Production vs. Trend Utilization



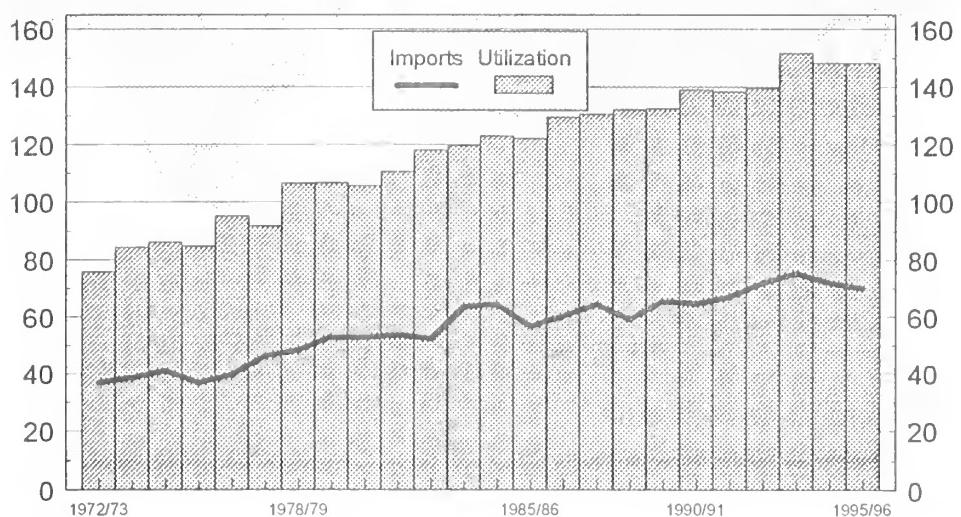
Underpinning Wheat and Wheat Product Import Demand Steadily Growing ...

Million metric tons



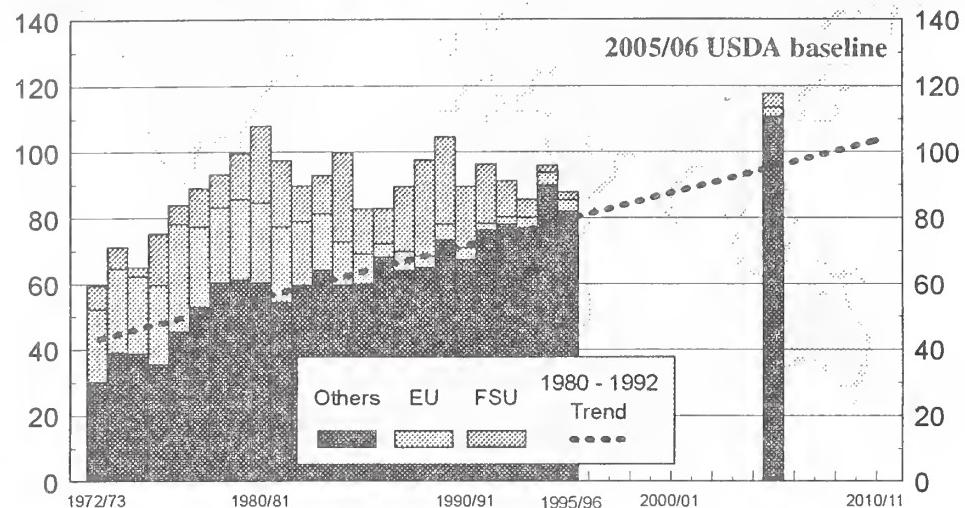
The Key Markets Underpinning Wheat Trade Remain Heavily Dependent on Imports

Million metric tons



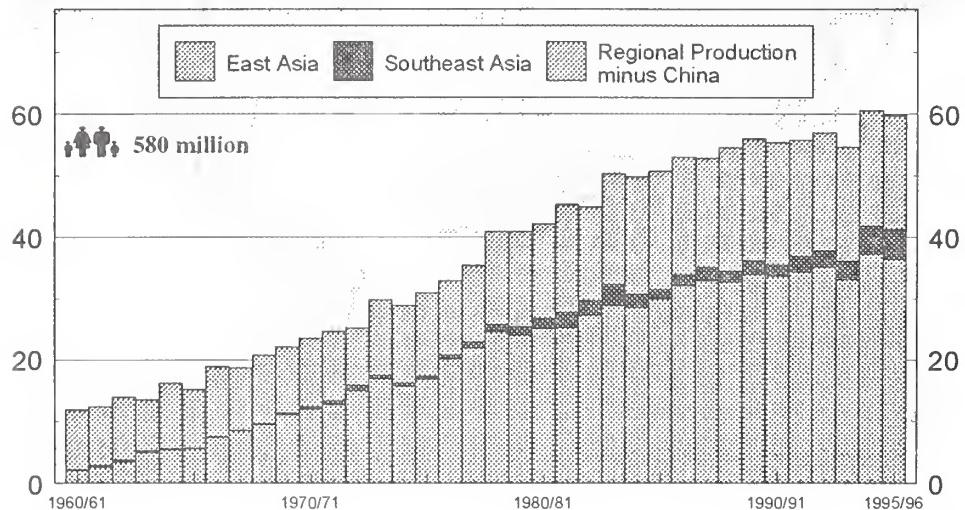
Underpinning Coarse Grain Import Demand Continues Steady Growth...

Million metric tons



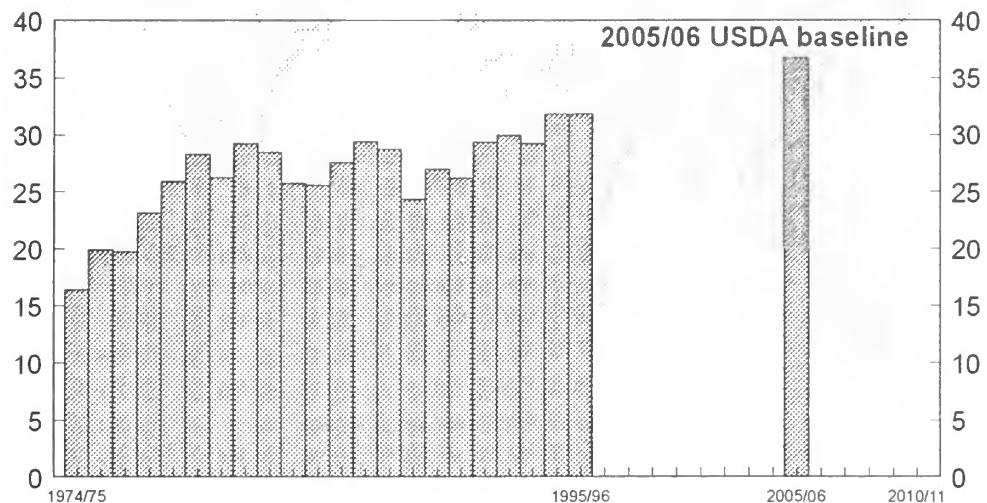
Record East and Southeast Asia Coarse Grain Imports Reach 47 Percent of World Total

Million metric tons



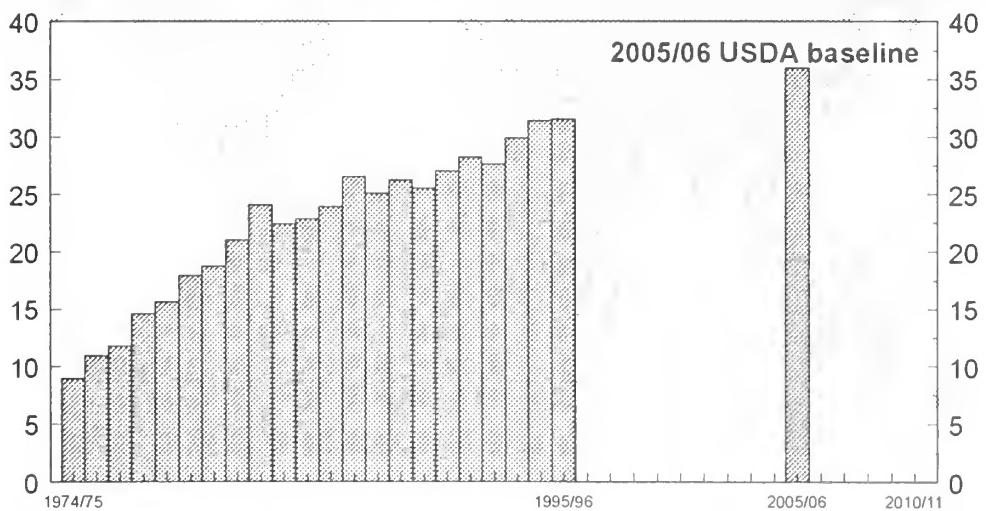
World Soybean Imports Expected to Grow at a Modest Pace

Million metric tons

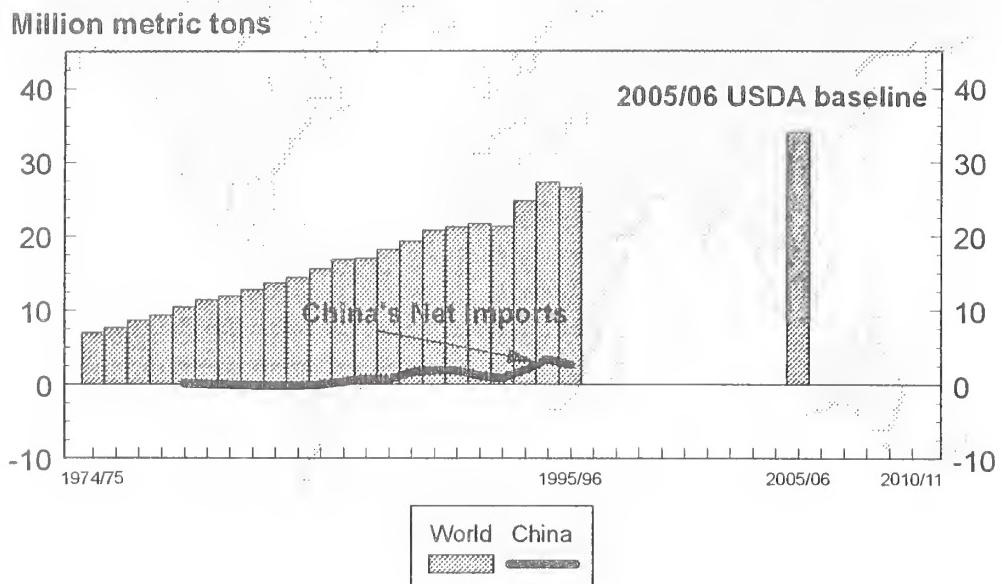


Soymeal Imports: Expected to Grow in Southeast Asia, but...

Million metric tons



World Vegetable Oil Imports Expected to Maintain Historical Trend Line Growth



GRAINS AND OILSEEDS OUTLOOK

Thomas F. Tice
Feed Grains and Oilseeds Analysis Group
Economic Policy Analysis Staff
Farm Service Agency

Opening Remarks

Good morning. I would like to begin by thanking all those who have made contributions to prepare these baseline projections and make this forum possible. Presenting USDA's domestic outlook for grains and oilseeds this year is particularly challenging. At the writing of this presentation, the structure of farm programs for the 1996 field crops and beyond is still very uncertain. For over a decade, commodity program structure has been a key element in shaping prospects for commodities. For the longer term prospects, USDA analysts assumed a continuation of commodity program provisions similar to current law, that is, programs which applied to the 1993 through 1995 crops of wheat, feed grains, and oilseeds. New farm program provisions being debated in Congress will undoubtedly continue its guiding influence on the future of U.S. production. However, the purpose of this forum is not to debate domestic policy, but to frame the environment under which these issues are debated.

In spite of the uncertainty about U.S. domestic policy, for the longer term, assumptions concerning the level of demand can provide decision-makers with useful insights about the prospects for domestic crop producers. Future prospects of demand for field crops are likely to have a major influence on the implementation of whatever domestic farm program that is ultimately passed by Congress.

I will briefly update the 1995/96 wheat, corn and soybean projections and give our assessment of the 1996/97 situation. Next, I will discuss three important policy and working assumptions: (1) the Conservation Reserve Program (CRP) assumptions; (2) ethanol assumptions; and (3) corn and soybean trend yield assumptions. These assumptions are important to the baseline projections because of the considerable impact their outcome has on the level of resources available for production and/or the level of demand during the longer-term period. I will conclude with a brief overview of the long-term outlook for grains and oilseeds.

Updating 1995/96 and 1996/97 Forecasts

The 1995/96 forecasts for wheat, feed grains, and oilseeds used in the baseline were from the January 16, 1996, issue of the World Agricultural Supply and Demand Estimates. Few changes were made to these estimates in the February report and most would not likely change our longer term analysis significantly. Thus, the updating will be quite brief.

Wheat

The wheat 1995/96 supply and demand balance sheet has been revised modestly since the baseline was prepared in January. Imports of wheat were reduced 15 million bushels to reflect the pace of imports-to-date and prospects for further imports. On the demand side, exports were revised upward 50 million bushels and feed and residual use was reduced 25 million bushels. The forecast of exports increased due to the unexpectedly large purchases by China and continued strong pace of sales to other countries. Overall, ending stocks are projected 40 million bushels lower than in the January baseline, at 346 million bushels. This places stocks only slightly above the 1973/74 low. The forecast range of season-average farm prices was narrowed to \$4.40 to \$4.50 per bushel, about \$1.00 above 1994/95. While none of these changes were considered to have a significant impact on the longer term analysis, supplies for 1996/97 are slightly lower.

Record high prices for wheat combined with good planting conditions in Montana, South Dakota, and the Midwest soft red winter wheat States led to the highest winter wheat seedings since 1990. Planted area of 52.0 million acres is up 7 percent from 1995. Spring wheat (including durum) area is expected to increase only slightly to 21 million acres compared with 20.5 million in 1995. Although wheat prices remain attractive this year, competing feed grain and oilseed prices are strong as well, limiting potential spring wheat area expansion. Also, much of the increase in winter wheat plantings in Montana was likely on land that had been planted to spring wheat in 1995. Poor weather conditions in the fall of 1994 kept winter wheat plantings down in Montana.

Higher harvested area and an assumed yield of 38 bushels per acre will result in wheat production of 2,450 million bushels for 1996, about 12 percent above 1995. However, tight beginning stocks will result in 1996 supplies of around 2.9 billion bushels, an increase of just under 5 percent from this year.

Total wheat use is projected to remain relatively flat in 1996/97, continuing the pattern of the last several years. Domestic food use continues to trend upward, while feed and residual use will rise because of strong feed grain prices this summer. Exports are projected to drop from this year as the U.S. will face increased competition from expanding production in most of the competing exporting countries. Ending stocks could be up around 80 million bushels from this year.

With a less tight U.S. and world supply/use balance, the U.S. farm price of wheat could drop 50 to 60 cents from this year. However prices will be 70 to 80 cents above the average price for the 1990-94 period.

Table 1. Wheat Supply, Demand, and Prices: Comparison of 1995/96 January 1996 vs. February 1996 Forecasts and 1996/97 Projections.

Item	Units	1995/96 1/			1996/97
		Jan. 1996	Feb. 1996	Change	
Planted	mil. ac.	69.2	69.2	0.0	73.0
Harvested	mil. ac.	61.0	61.0	0.0	64.5
Yield	bu./ac.	35.8	35.8	0.0	38.0
Production	mil. bu.	2,186	2,186	0	2,450
Supply 2/	mil. bu.	2,777	2,762	-15	2,896
Feed & Residual	mil. bu.	200	175	-25	325
Food, Seed, & Industrial	mil. bu.	966	966	0	970
Exports	mil. bu.	1,225	1,275	+50	1,175
Total Use	mil. bu.	2,391	2,416	+25	2,470
Ending Stocks	mil. bu.	386	346	-40	426
Farm Price 2/	\$/bu.	4.40	4.45	+0.05	3.90

1/ Source: World Agricultural Supply and Demand Estimates, January 16, 1996 and February 9, 1996.

2/ Mid-point of average farm price forecast.

3/ Includes imports.

Corn

The 1995/96 corn supply and demand balance sheet has also changed since the baseline was prepared in January. Reduced Argentine crop prospects and larger forecast imports by Thailand and the Philippines resulted in an increase of 50 million bushels in U.S. export prospects. Exports are expected to slightly surpass last year's 2.177 billion bushels and be the largest exports since 1989/90. Because estimates of domestic demand were unchanged, ending stocks were reduced to 457 million bushels, representing just 5.4 percent of projected use. This would be the lowest stocks for the September-August marketing year which are estimated back to 1975/76. Projected average farm prices remained unchanged at \$3.00 to \$3.40 per bushel.

Plantings of corn this spring will be influenced by the strong prices currently being received for the 1995 crop as well as other factors. The ratio of projected average 1995/96 farm prices of soybeans relative to corn of just under 2.2-to-1 suggests strong incentives to plant corn. Typically, a ratio of around 2.5-2.6 would be considered a neutral relationship. Other factors will also influence corn plantings this spring, including rotational considerations, weather during the soil preparation and planting season, whole-farm conservation plans, and the option for early-out of expiring 1996-CRP contracts. The forecast of corn plantings is expected to be 80.8 million acres, up 13 percent from 1995 when a 7.5 percent acreage reduction program (ARP) and an extremely wet spring curtailed plantings.

Using a trend yield of 127 bushels per acre and harvested area of 74.2 million acres, 1996 corn production would be about 9.4 billion bushels, up over 25 percent from last year's reduced crop. However, the larger crop will be partially offset by the reduced carryin. Total 1996/97 corn supplies would total around 9.9 billion bushels, up about 1 billion from the previous year.

Table 2. Corn Supply, Demand, and Prices: Comparison of 1995/96 January 1996 vs. February 1996 Forecasts and 1996/97 Projections.

Item	Units	1995/96 1/			1996/97
		Jan. 1996	Feb. 1996	Change	
Planted	mil. ac.	71.2	71.2	0.0	80.8
Harvested	mil. ac.	65.0	65.0	0.0	74.2
Yield	bu./ac.	113.5	113.5	0.0	127.0
Production	mil. bu.	7,374	7,374	0	9,425
Supply 2/	mil. bu.	8,942	8,942	0	9892
Feed & Residual	mil. bu.	4,600	4,600	0	5,325
Food, Seed, & Industrial	mil. bu.	1,685	1,685	0	1,750
Exports	mil. bu.	2,150	2,200	+50	2,100
Total Use	mil. bu.	8,435	8,485	+50	9,175
Ending Stocks	mil. bu.	507	457	-50	717
Farm Price 3/	\$/bu.	3.20	3.20	+0.00	2.75

1/ Source: World Agricultural Supply and Demand Estimates, January 16, 1996 and February 9, 1996.

2/ Includes imports.

3/ Mid-point of average farm price forecast.

Demand prospects are expected to remain quite robust during 1996/97. Exports are expected to exceed 2 billion bushels for the third consecutive year. Larger corn supplies and large livestock inventories will boost feed and residual use to about 5.3 billion bushels. Food, seed, and industrial use is also expected to increase to near 1.8 billion bushels. Total use is projected to reach nearly 9.2 billion bushels in 1996/97, about 250 million bushels less than production.

With projected use of 9.2 billion bushels, ending stocks for 1996/97 are projected to increase roughly 250 million bushels from 1995/96 carryout. The stocks-to-use ratio would remain below 10 percent for 1996/97, keeping prices relatively high. However the larger corn crop and larger supplies of other grains will likely result in corn prices averaging about \$0.50 per bushel below expected 1995/96 prices. Corn prices have exceeded \$2.70 per bushel in only four previous years--1974, 1980, 1983 and 1995--exceeding \$3.00 per bushel in each year.

Soybeans

The 1995/96 supply and demand balance sheet for the U.S. soybean sector is similar to the USDA January baseline with changes limited to a downward adjustment in soybean crush and an offsetting upward revision of exports. The pace of soybean exports in 1995/96 continues to be better than expected, with strong Asian demand accounting for much of the gain.

The lackluster performance of U.S. soybean product exports--soybean meal and oil--however, led to a downward adjustment in their respective export projections from the January baseline level. Lagging soybean oil exports and a surge in reported stock levels led to a downward revision in the soybean oil price to the lowest level in more than 2 years. Slipping oil prices and lower soybean meal exports prompted the season average soybean price to be reduced by 5 cents per bushel to \$6.50-\$7.50.

A return to more normal planting conditions in spring of 1996 compared with the 1995 planting season and strong corn prices relative to soybeans suggest that planting of soybeans could drop to about 61 million acres in 1996/97. While soybean plantings are likely to decline significantly in the Corn Belt region, plantings are likely to increase marginally in the Southeast and Delta regions as \$7-per-bushel soybeans stimulate an expansion of double cropped soybeans. In addition, soybean plantings may increase on traditional cotton land due to attractive soybean prices and higher variable cost of production for cotton to control increasing pest problems.

A return to trend yields will net soybean production of around 2.2 billion bushels. However, the lowest carry-in stocks since 1988/89 will constrain supplies to a three year low. Tight supplies are likely to weaken both domestic demand for crush and exports to 1,360 and 765 million bushels respectively.

While U.S. soybean exports for 1996/97 are presently pegged at lower than this year's levels, export demand for U.S. beans is expected to remain relatively strong, over 100 million bushels above the average exports during the 1989/90-93/94 period. The South American soybean crop, presently in the middle of the growing season, continues to be beset by variable weather conditions and lower plantings.

More robust soybean and meal prices in 1996/97 compared to corn prices, will constrain domestic meal consumption and soybean crush. Crush is forecast at 1.36 billion bushels, a three year low and down 20 million from 1995/96. Additionally, constrained growth in world soybean meal consumption due to lower feed grain prices is expected to limit U.S. soybean meal exports to 5.55 million short tons, down from the 5.8 million estimate for 1995/96.

Table 3. Soybeans Supply, Demand, and Prices: Comparison of 1995/96 January 1996 vs. February 1996 Forecasts and 1996/97 Projections.

Item	Units	1995/96 1/			1996/97
		Jan. 1996	Feb. 1996	Change	
Planted	mil. ac.	62.6	62.6	0.0	61.0
Harvested	mil. ac.	61.6	61.6	0.0	60.0
Yield	bu./ac.	34.9	34.9	0.0	37.0
Production	mil. bu.	2,152	2,152	0	2,220
Crush	mil. bu.	1,390	1,380	-10	1,360
Seed & Residual	mil. bu.	112	112	0	115
Exports	mil. bu.	800	810	+10	765
Total Use	mil. bu.	2,302	2,302	0	2,240
Ending Stocks	mil. bu.	190	190	0	175
Farm Price 2/	\$/bu.	7.05	7.00	-.05	6.95

1/ Source: World Agricultural Supply and Demand Estimates, January 16, 1996 and February 9, 1996.

2/ Mid-point of average farm price forecast.

Despite a projected slow-down in total soybean use as supplies tighten, stocks are forecast to slip to 170 million bushels, supporting soybean prices in a range similar to this year's \$6.50 per bushel to \$7.50 per bushel. Meal prices will be pressured upward to a range of \$210-\$240 per short ton. Meanwhile, global vegetable oil markets are expected to remain tight as availabilities of high oil-yielding crops wane. This tightness will prompt a slight

expansion in U.S. soybean oil exports to 1.95 billion pounds. A strong soybean oil carryover from 1995/96 will, however, propel U.S. supplies to a record high, dampening expectations of soybean oil prices to a range of 22-25 cents per pound.

Key Baseline Assumptions

CRP

On January 25, 1996, USDA announced an 'early-out' option for producers with acreage enrolled in the Conservation Reserve Program (CRP) whose contracts are scheduled to expire September 30, 1996. Of the 36 million acres currently in the CRP, about 15 million acres are under contracts which expire on September 30, 1996. USDA has also indicated to producers that terms and conditions for contract extensions will be announced before they are required to decide whether to participate in the early-out option. Currently the Secretary does not have authority to enroll new lands to replace early-out acreage until 1997. However, at that time or when new farm legislation provides for new enrollment authority, USDA plans to replace the early-released acreage with enrollments of environmentally sensitive lands.

The impact of the early-out option for CRP contracts expiring in September 1996 on 1996 crop plantings is expected to be relatively limited. Not knowing whether a producer may be able to extend current CRP contracts and uncertainty about 1996 commodity programs is expected to limit participation. USDA currently has authority to extend contracts upon expiration, at terms agreeable to the Secretary and the contract holder.

Of the 15 million acres of CRP contracts expiring in 1996, about 8 million acres are eligible for the early out option based on soil erodibility and special locational and conservation practice criteria. The baseline analysis suggests that contracts representing only about 1 million of these acres will choose the early-out option. Of this 1 million acres, approximately 600,000 acres are corn, wheat, and soybean acres.

The baseline analysis assumes that during calendar year 1997 USDA will enroll an additional 1.6 million acres of environmentally sensitive land. The baseline also assumes USDA uses its authority to offer contract extensions as they expire. By the 2000/01 crop year, total land in the CRP is projected to decline to about 28 million acres, and to about 27.5 million for 2003/04 to 2005/06. Thus, by 2003/04, nearly 9 million acres of additional cropland will be available to plant crops to meet expanding domestic and world grains and oilseed demand.

Corn Yields

Another big factor in the baseline projections for corn is the trend yield assumption, particularly because of the large yield variations experienced in recent history. Regressing U.S. corn yields over time for the period 1960 to 1995 results in a simple linear trend yield

for corn of 126.1 bushels per acre for 1996. Yield models with weather variables give a mean expected corn yield of about 127.5 bushels.

Another method for calculating trend yields uses ear weights and plant count statistics. USDA publishes the number of harvested ears per acre for 10 objective yield states. Ear weights can be calculated by taking the yield in bushels per acre, converting it to pounds per acre, then dividing by the ear count to get the pounds per ear. An examination of this data for the 1979-95 period indicates that most of the trend increase in corn yields is due to more harvested ears per acre rather than ear weights. Using a trend ears per acre and an average ear weight (1979-95, excluding 1983, 1988, and 1993) gives a yield of 127.2 bushels, in line with our trend yield forecast.

Soybean Yields

The soybean production outlook for 1996/97 and for the projection period also depends importantly on yield assumptions. Indications that the last decade has witnessed a shift in soybean yield potential is revealed by USDA's National Agricultural Statistics Service (NASS) which points to strong increases in pod count and plant populations per acre.

However, strong yield variability over the past 5 years has masked the true extent of the shift in yield potential. Yields in 1994, at 41.9 bushels per acre, were nearly 2 standard errors above the 1970-1995 U.S. trend yield, while yields in 1992 were also abnormally high for the U.S. Variable weather conditions in 1995, however, pushed soybean yields lower than trend yields, but only by less than one standard error.

Based on regional analyses, which indicate that over the past five years higher-than-normal yields have been evidenced in the mid-South and parts of the Eastern Corn Belt, USDA baseline projections for yields exceed the simple 1970-95 linear long term trend.

Ethanol

A significant difference in this year's baseline analysis of domestic corn demand is due to the lower projected use of corn for fuel ethanol production. During 1995, the courts failed to uphold EPA's final rule published on June 30, 1994, requiring that 15 percent of the oxygenate requirement under the Clean Air Act must be satisfied with fuel from renewable sources (primarily ethanol) during calendar year 1995 and 30 percent beginning in calendar year 1996. Under the Clean Air Act, selected metropolitan (attainment) areas must use oxygen-enhanced fuels to meet clean air standards. In past baseline analyses, ethanol demand was expected to grow dramatically reaching about 1,700 million gallons (equivalent to 680 million bushel of corn) by 2000/01 and 2,100 million gallons (840 million bushels of corn) by 2005/06.

Because the courts have not upheld the renewable oxygenate requirement, it is expected that ethanol demand will plateau at about 1.6 billion gallons (650 million bushels of corn) by 2000/01. This is only slightly higher than current production capacity estimates for the industry of about 1.4-1.5 billion gallons. Thus, little additional ethanol production capacity is expected over the next ten years.

Other components of the food, seed, and industrial (FSI) sector are expected to continue to grow in line with past analyses, averaging between 2 to 3 percent per year. Total FSI demand is expected to reach 2.1 billion bushels by 2005.

The Long-Term Baseline Picture at a Glance

Bob Riemenschneider has given you the international operating environment for the U.S. grains and oilseeds sectors. Rising global incomes are generating strengthening demand for U.S. grains and oilseeds, resulting in relatively strong growth for U.S. exports of wheat and feed grains. Annual growth in domestic use for wheat, corn, and soybeans averages about 1 percent, 2 percent and 1 percent, respectively over the 1996 - 2005 period. Export growth rates are higher for wheat and feed grains at about 2.5 percent per year. Export growth for soybeans matches its domestic growth rate. Overall, global demand is rising faster than production leading to tightening supply/demand balances and boosting prices. This pulls land back into production. Wheat and feed grain ARP levels are set at zero percent. Acreage idled under the 0,85-92 provisions is the only acreage idled under the annual programs. While the CRP is continued, relatively strong returns draw less environmentally sensitive land back into production. The acreage remaining in the CRP levels off at about 27.5 million acres during the last half of the baseline period. By marketing year 2005/06, average farm prices per bushel reach \$4.15 for wheat, \$2.80 for corn, and \$7.05 for soybeans.

MARKET DEVELOPMENTS AND POLICIES SHAPING THE OILSEEDS MARKETS BEYOND 1995/96

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Alexandria, Virginia

My remarks today are based for the most part on a multi-client study our firm has just completed on the implications of changing US policy for agribusiness. Dr. Martin Abel was the project director and primary author. I will focus on the oilseed aspects of the study.¹

As always in this business, it comes down to a question of supply and demand. Our basic view is that the underlying demand for grains and oilseeds will remain fairly robust over the next five or ten years. Rapid economic and population growth in Asia, some acceleration in Latin America, and recovery in Central Europe and the former Soviet Union will all contribute to that demand. The question is where the supplies will come from. Fortunately the United States appears to be positioning itself to make a major contribution on that front.

The reforms now being made in policies for our major field crops have two components: the level of payments made to producers, and the amount of land available for production. The former, while important to producers, will have little impact on future levels of US production, commodity prices, and export competitiveness. The amount of land available for production is, on the other hand, the key factor in determining future US competitiveness in world markets.

The Farm Bill debate, while not yet over, has made it very clear that there will be a major expansion in US plantings of grain and oilseeds. The acreage idling policies adopted in the 1980s will be largely abandoned and this is forecast to result in a 17.5 percent increase in grain and soybean plantings between 1995 and 2002, raising planted area by almost 40 million acres. When combined with continued increases in crop yields, the expanded area will lead to a large increase in US grain and oilseed production. How will this mesh with developments in the rest of the world?

¹ **US Agricultural Policy: A Radical New Direction - Implications for Agribusiness in Grains, Oilseeds, and Animal Products.** Abel, Daft, Earley & Ward International and Produce Studies Group. January 1996.

It should now be abundantly clear that we continue to experience strong growth in effective demand for improved diets around the world. In the developing countries, that improvement manifests itself mostly in the form of greater demand for livestock products: red meat, poultry, eggs, and dairy products. It also involves significant increases in vegetable oil use, either as a cooking medium, in margarine and other spreads, or as an ingredient in processed foods.

For several years after 1985, the US government and many grain and oilseed producers felt that they could better their economic situation by restricting production, raising prices by producing less, and remaining competitive in export markets by using export subsidies. However, they underestimated the ability of the rest of the world to produce commodities to meet growing world demand. In fact, the United States has been unable to fundamentally influence world and domestic prices through large-scale land idling.

In more recent years, it became clear to many grain and oilseed producers that idling land and restructuring production was not a viable route to improving incomes of producers. Ironically, while the US grain and oilseed sectors stagnated in the 1980s, in large measure because of restraints imposed by government policies, the animal product sector has boomed since 1985, particularly with respect to exports. The fact that this sector is free of government programs has not gone unnoticed.

Animal product exports have increased over the past 10 years at an average annual rate of 15-20 percent.² This export growth together with growth in domestic consumption of animal products has expanded the domestic demand for feedstuffs as shown in my first slide (Slide 1). Other domestic uses of grains and oilseeds also increased. But production was stagnant and this caused US grain and oilseed exports to decline. Even the use of export subsidies in such a situation could not expand exports since you cannot sell what you don't produce.

The need to generate a steadily increasing volume of livestock products over the coming decade insures that demand for feedstuffs, and particularly coarse grains and protein meals, will remain strong. US farmers will benefit as producers of both, but my charge today is to look just at the oilseed side, and I will focus on the soybean complex.

The world oilseed production is projected to increase more than 20 percent over the seven-year period covered by the new Farm Bill. Soybeans will hold their own and continue to account for about 70 percent of world production and 50 percent of world trade (Slide 2). Similarly oilseed meal will retain its role as the major protein feed component (Slide 3). But since world oil demand is growing more rapidly than world meal demand, soybean oil's market share will decline a further 3 percent as the soy product is outpaced by palm and rapeseed oil (Slide 4).

²

Meat, Poultry and Dairy Product Exports: A Silent Revolution, Abel, Daft & Earley, April 1993.

What then do we see in store for the US soybean complex? If farm programs are changed as currently foreseen, the return of a significant amount of idled acreage to production will permit soybean plantings to expand by about 3 million acres. With continued growth in average yields, production should reach 2.75 bil. bu. by 2002 as shown in the next slide (Slide 5). This uptrend in production will be in marked contrast to the stagnation evident in the 1980-1993 period.

We project the crush to increase by 175 million bushels over the period, driven in most years by increased demand for meal. Most of the growth in meal demand will be in the domestic market, fueled to a large extent by increased pork and poultry exports. There will also be modest growth in meal exports.

Export growth is expected to be quite rapid, increasing by 28 percent or 225 million bushels over the next seven years. Many of the major importers need both meal and oil and have domestic soybean crushing capacity. Thus it makes more sense for these countries to import soybeans to the extent practical rather than individual products in order to capture the economic benefits and profits from crushing beans themselves.

The United States is likely to experience the most rapid growth in soybean production of all the major producers, increasing its share of world output slightly from 48 percent in 1995/96 to 50 percent in 2002/03 (slide 6). Brazil and Argentina both have scope for increasing output. In Argentina, output growth will come primarily from increases in yields. In Brazil, increases in output will be based on yield growth in the more productive areas and an extension of area into newer producing regions. The latter are more distant from markets and the higher level of soybean prices being projected will be required to sustain growth in soybean area in the more remote areas which face high transportation costs. But ultimately, the Farm Bill provisions will allow US production to increase by more than in competing nations.

World soybean exports are projected to increase at a slightly faster rate than production. Argentina and Brazil will continue to favor crushing their beans rather than exporting them, and relying more on meal exports. For the two countries combined we are showing about a 1.5 percent annual growth rate for soybean exports over the next seven years. By contrast, US exports are projected to grow by 3.6 percent a year.

Total world soybean meal production is projected to increase by only 1.6 percent a year over the next seven years (Slide 7). Within this total picture, however, annual growth rates in output are expected to be 1.7 percent for the United States, 2.1 percent for Brazil, only 1.0 percent in Argentina, 1.7 percent in China, nearly 5 percent for India, and 3.0 percent for the "other" category of countries. World meal trade is expected to grow by 2.1 percent a year with most of the growth provided by Brazil, the United States, Argentina, and India. Asia will be the major growth market for imports, accounting for 65 percent of the growth in world meal imports. The US share of world meal production will remain unchanged in 2002/03 at about 35 percent, but there will be a small increase in the US share of world meal exports over the next seven years.

Soybean oil production will be distributed in relation to crush levels in various countries (Slide 8). We are projecting soybean oil trade to grow by 2.2 percent a year. On the export side, the United States is likely to gain market share because production will expand much more rapidly than domestic use, enabling exports to increase substantially. On the import side, China will continue to be the largest single importer.

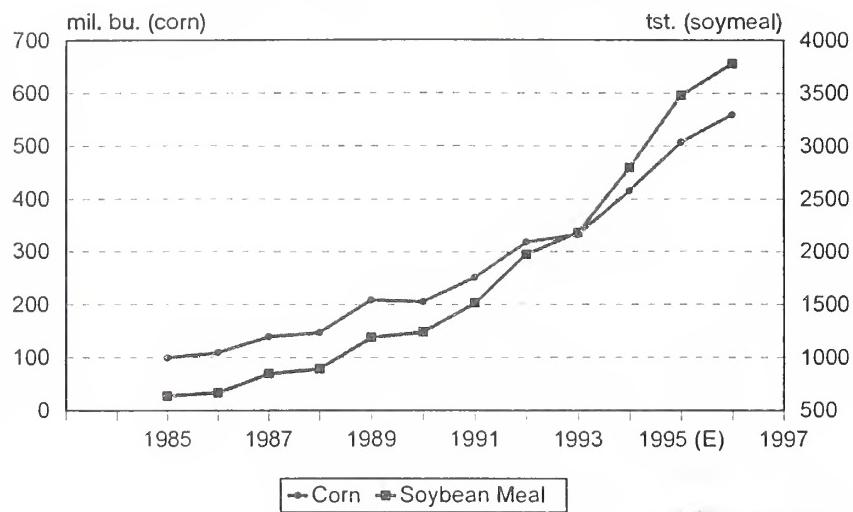
How can we put this whole picture together and come to some conclusions about what it means for US soybean growers and US agriculture in general? First of all, taking bean, meal and oil exports as a whole, we should see a strong positive trend in the value of US exports (Slide 9). By 2002/03 we project soy complex exports of \$8.8 billion, up about 50 percent from a decade earlier. In the slide we show a range of plus or minus 7 percent around that end point to reflect what might result from a stronger or weaker world economy, success of market development efforts, etc.

In terms of world market share, we project a modest gain from the 41.6 percent achieved in 1994/95 to 43.5 percent in 2002/03 out of a \$20 billion world trade bill (Slide 10). If one makes the same calculation in volume terms, the US share rises from 43.4 to 44.3 percent of soy complex tonnage. While in the right direction, it is not especially dramatic.

But let's return to the other part of the protein export picture -- the meat sector. My last slide shows our forecast of the US share of meat and poultry trade (Slide 11). Our share of world broiler trade is projected to increase to more than 60 percent, turkeys to 45 percent, pork to 33 percent, beef to 25 percent. Since total trade volume is also expanding, this represents a considerable increase in tonnage.

I did not make a slide for this, but let's consider the quantity of soybean meal embodied in this expected volume of meat exports. It amounts to 6.2 million short tons, or about 80 percent of the expected meal exports per se. Thus I think we can conclude that the world oilseed outlook is a very positive one for US oilseed producers.

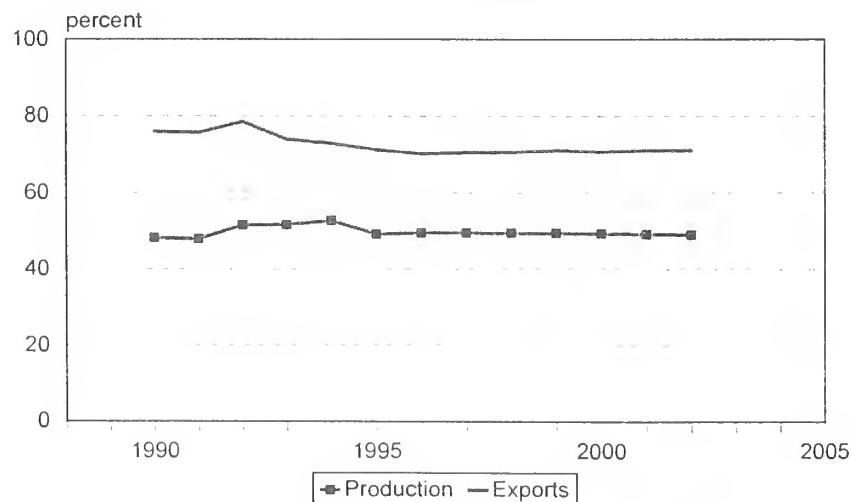
Corn and Soybean Meal Equivalents of US Animal Product Exports



Source: USDA and ADE&W estimates for years 1995-2002



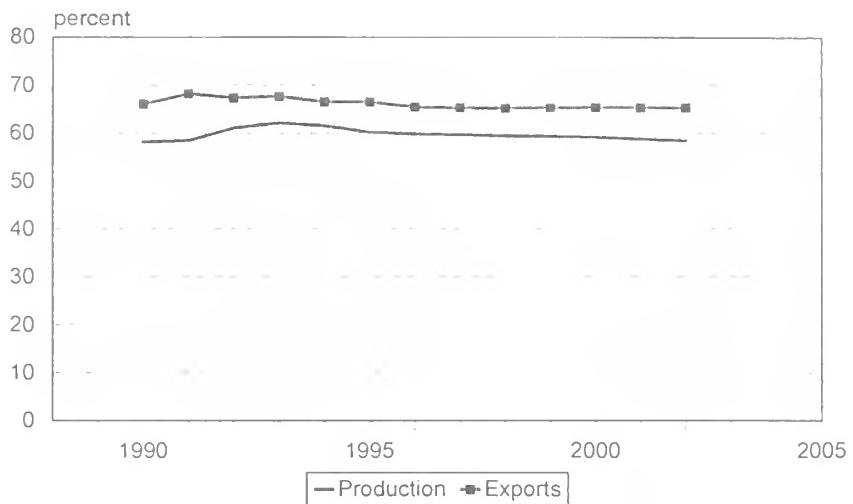
Soybean Shares of World Oilseed Production and Trade



Source: USDA and ADE&W estimates for years 1995-2002



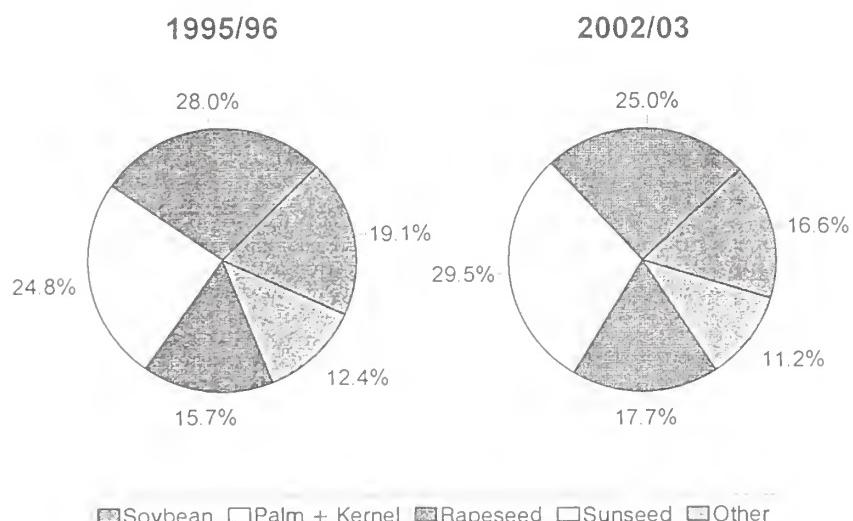
Soybean Meal Shares of World Meal Production and Trade



Source: USDA and ADE&W estimates for years 1995-2002

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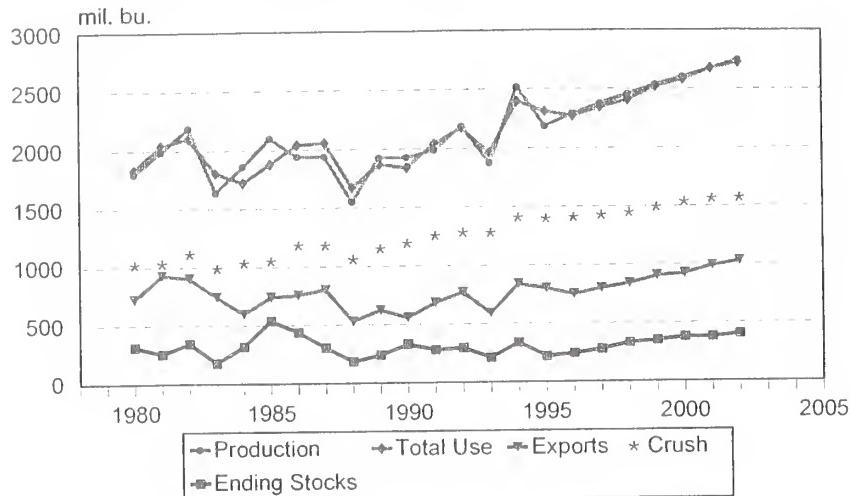
Share of Major Oils in World Production



Source: USDA and ADE&W estimates for years 1995-2002

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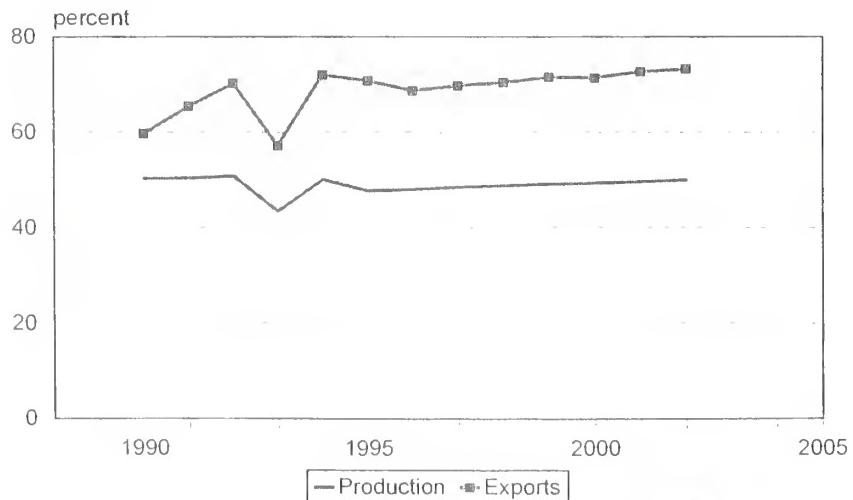
US Soybean Balance



Source: USDA and ADE&W estimates for years 1995-2002

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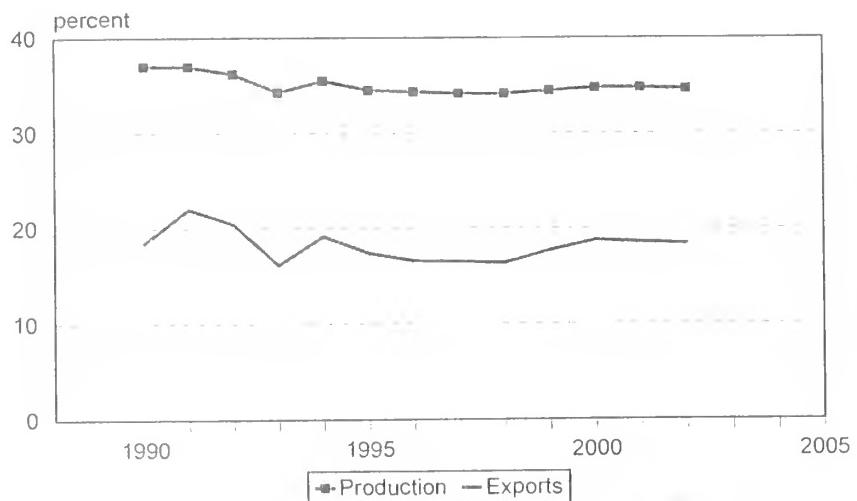
US Shares of World Soybean Production and Exports



Source: USDA and ADE&W estimates for years 1995-2002

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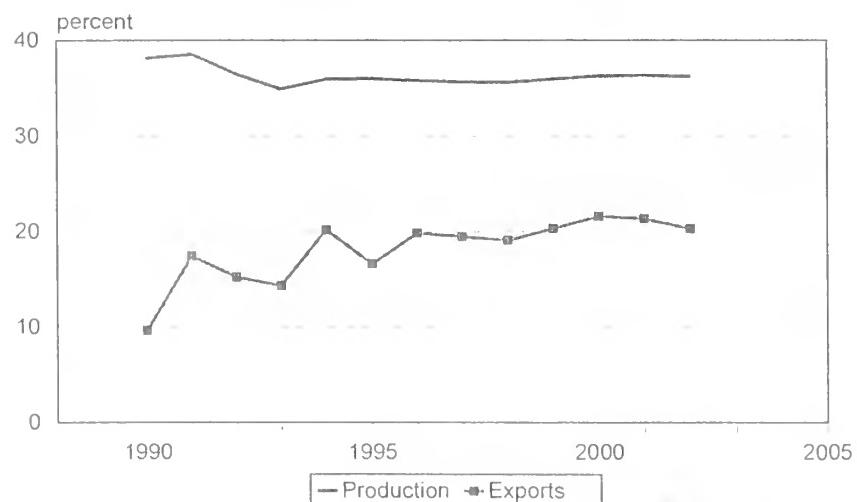
US Shares of World Soybean Meal Production and Exports



Source: USDA and ADE&W estimates for years 1995-2002



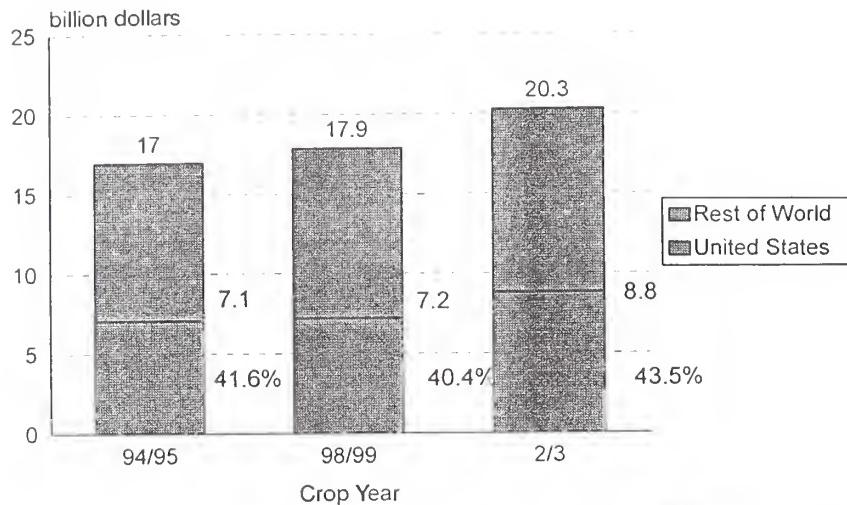
US Shares of World Soybean Oil Production and Exports



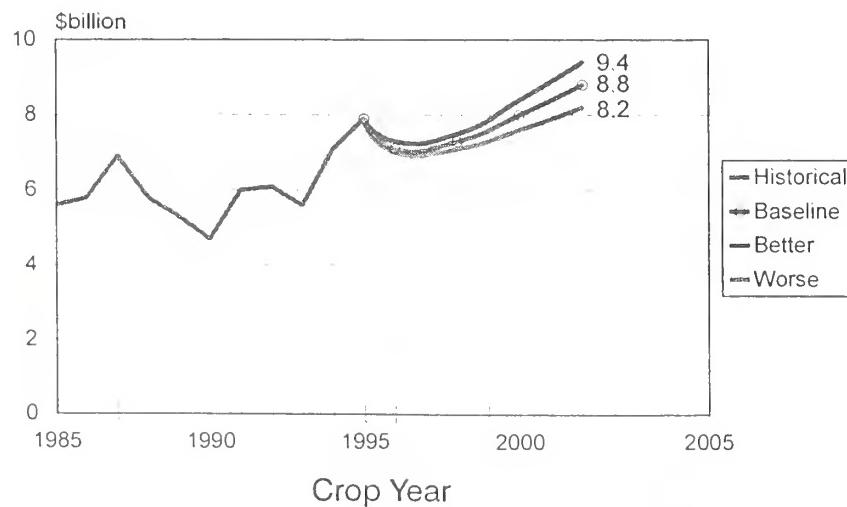
Source: USDA and ADE&W estimates for years 1995-2002



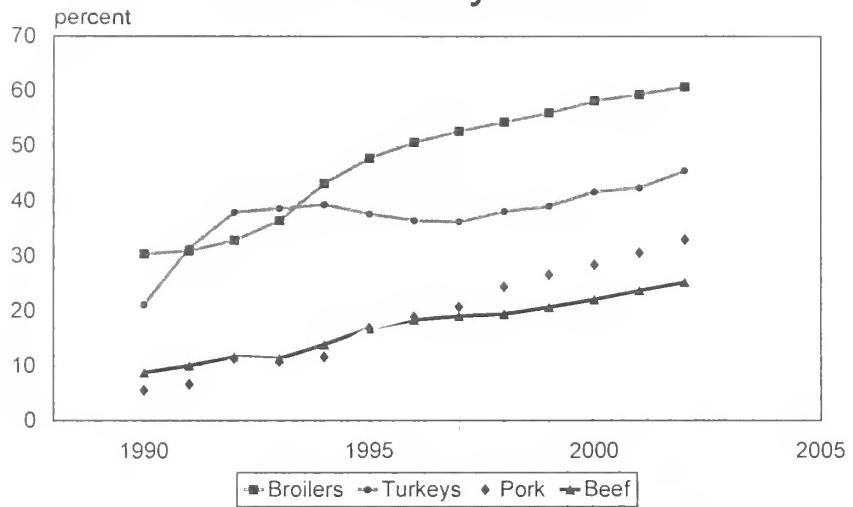
World Soy Complex Trade



US Soybean Complex Exports



US Shares of World Meat and Poultry Trade



Source: USDA and ADE&W estimates for years 1995-2002

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THE OUTLOOK FOR U.S. & WORLD GRAIN MARKETS BEYOND 95/96

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The Outlook for U.S. and World Grain Markets Beyond 1995/96

The dynamic changes facing the world and U.S. grain markets in the current year make it an extraordinary challenge to assess the short-run outlook, let alone trying to look farther down the road a bit farther and trying to project world markets. The 1994/95 and 1995/96 marketing years have been characterized by strong demand, even in the face of stronger world grain prices. It would appear that the major factors currently impacting the grain markets are not only short-run fundamentals, but are for the most part the major driving forces I expect to shape the world and U.S. grain markets over the next 5-10 years.

Since the start of the 1994/95 marketing year, world markets have begun to feel the impact of several fundamental shifts in the markets, including:

- Continued declines in world grain stocks to historically low levels, in spite of a record 10 billion bushel U.S. corn crop in 1994.
- Continued declines in world grain acreage, falling to the lowest level in over 35 years in 1995
- Recovering world economic growth, including real annual growth of 5-10% in many of the developing countries.
- A dramatic shift for China from being the world's second largest exporter of corn, to a net importer of corn.
- Continued weakening of the dollar, reducing the cost of grain to importers from the U.S., the world's largest exporter of grains.

Many of these factors have been in place for several years. However it appears the cumulative effect of these driving forces, in particular the shift of China from a net exporter to net importer, started to have the most notable impact on both world demand and prices during 1994/95. Importantly, each of these factors supports strength in world grain demand over the next 5-10 years.

Low World Grain Stocks

At the end of the 1995/96 crop year, world grain stocks as a percent of usage are forecast to decline to 13% of usage, the lowest level since the USDA began measuring stocks in 1960 and down from the 1986/87 peak of 32%. Since 1987, stocks have declined precipitously world-wide, but most notably amongst the major exporting countries of the world. Changes in stocks policy in the United States has dramatically reduce government ownership of stocks, and more recently Canada and the European Union have had policy changes which have led to a reduction in grain stocks as well. Declines in acreage, also due in part to governmental policy, have also helped accelerate the decline in stocks.

We would anticipate some increase in stocks during 1996/97 pending a return to more normal weather in the major grain-producing areas. However a recovery to a more typical level of stocks, especially in the face of growing world demand, will require a rebound in acreage over the next 3-5 years. In the interim, exaggerated price moves might be expected in the face of any crop shortfalls.

Low World Grain Acreage

World grain acreage (wheat and feed grains) in 1995 fell to the lowest level since USDA began measuring in 1960, and is off 66 million hectares or 11% since 1981. This decline reflects both policy decisions and economics. Nearly half of the decline (30 million hectares) has been seen in the former Soviet Union, in part a reflection of economic turmoil seen there in recent years. A rebound in grain acreage in the former Soviet Union may occur, but is not anticipated over the short-term, and a return to acreage levels seen in 1981 is difficult to imagine.

Excluding the former Soviet Union, world acreage has declined by 35 million hectares or 8%. Switching to oilseeds has likely been a major cause for the decline in grain acreage, as oilseed acreage world-wide has increased by over 30 million hectares. This has been most pronounced in the European Union, where total grain acreage has declined by 8 million hectares. The Conservation Reserve Program in the United States, idling roughly 36 million acres (14 million hectares) for 10 years, has played no small part in the decline in world grain acreage. China, where there have been several recent reports discussing the impact of urban encroachment upon grain acreage, has actually seen acreage fall only 4% between 1981 and 1995, and has in fact been about unchanged over the past 10 years.

Strength in world demand and tight world stocks will result in a need to increase acreage to meet growing usage of grains. Economics will play a significant part in this, by drawing acreage back into production and perhaps away from oilseeds in some cases. However changes in agricultural policy, both in the U.S. and around the world, would also be beneficial in meeting world demand over the next 10 years.

World Economic Growth Boosted By Growth in Developing Countries

The linkage between macro-economic factors and world grain demand has sometimes been clouded in the past by a barrage of short-term impacts. These include poor yields, but also policy decisions regarding acreage, stock-building, as well as trade restrictions. However over a longer period, there appears to be greater linkage, and the outlook is decidedly positive for U.S. and world grain markets in the coming years.

The positive impact from Soviet imports of grain, beginning in the mid-70s, has been followed by what appears to be an equally negative impact from declining Soviet imports over the past 10 years. Until just recently, the loss of Soviet demand, once equal to over 20% of world grain imports, has easily over-shadowed the strong economic growth and rising imports in much of the developing world. Growth rates of 5-10% in many developing countries have allowed for a rise in income, albeit from low levels, and are leading to improving diets among a significant portion of the world's population. Nowhere is this more evident than in Asia, but also in other areas of the world such as Latin America.

China's economic growth appears to be providing the greatest evidence of what strong economic growth could mean in the futures for U.S. and world grain markets. China has been a net exporter of corn for several years, and in the early 90's was the world's second largest exporter of corn (behind only the U.S.). The impact in 1994/95 of China going from a net exporter of nearly 500 million bushels of corn to a net importer, created a dramatic shift in world trade flows, in particular to increase the export demand for U.S. corn. Since 1994, China has also sharply increased their imports of other commodities (e.g., vegoil and cotton), and had a dramatic impact in those markets as well. The dramatic shift for China from a large exporter of corn to an importer had obvious short-term implications. But it also revealed to the world the potential China has to be the dominant factor in world trade in the coming years.

China's population of 1.2 billion people and strong economic growth make it the obvious choice when talking about potential growth in world grain trade. However a large population base with strong economic growth outside of China cannot be over-looked. This includes South Korea, Indonesia, Vietnam, Malaysia to name a few in Asia, but also much of Latin America. Economic developments in India, with a population nearing 1 billion, cannot be over-looked either. As with China, these countries represent a large population experiencing rapid economic expansion, but are growing from a relatively low level. One would expect improvements in the diets to be a priority in these countries, and thus are a very positive development for world grain demand in the coming years. For the U.S., this would imply an increase in both grain exports as well as increases in meat exports.

Hence, a larger portion of the growth in world grain demand and trade can be expected to come from developing countries in the next decade. This opportunity looks very promising, but cannot be discussed without mentioning the caveat of relative political and economic instability

in many of the developing countries. As economic growth occurs, one would suspect that both political and social unrest within many of these countries may become more commonplace.

U.S. Competitive Position Improving

A positive outlook for world grain demand and trade appears well founded, based upon the economic growth and tight world grain stocks. The U.S. may be well poised to participate in the growth in demand, based upon increased access to markets, expected changes in ag policy, and the long-run impact of a weak dollar.

The U.S. will gain greater access in the future, as a result of the recent passage of NAFTA and GATT. Reductions in both tariff and non-tariff barriers are of greatest benefit to low-cost producers, which by nearly any standard the U.S. is in grain production. As world grain demand and trade expands, the benefits from implementation of GATT and NAFTA would be expected to become more important.

Ag policy will play an important role in the U.S. competitiveness during the next decade and beyond. The proposed elimination of set-aside requirements, increased producer flexibility in planting decisions and maintaining loan rates which do not interfere with marketing decisions, would be helpful in improving the U.S. competitive position in world grain markets in the future.

Weakness in the dollar, over the long-run, has reduced the cost of U.S. exports to importing countries. As an example, the decline in the dollar vis-à-vis the Japanese yen, has essentially lowered the cost of corn to the Japanese consumer by more than half over the past 10 years. Because Japan is the largest customer for U.S. corn exports and an important importer of other U.S. agricultural commodities, the weaker dollar has and will continue to play an important role in determining how competitive the U.S. will be in world grain trade.

The Outlook Going Forward

During the current crop year, grain prices have surged due to the strength in demand as well as the U.S. crop shortfalls for both wheat and feed grains. This price strength has in the past been followed by a move back toward the longer-term average for prices. During the 50's and 60's, U.S. average farm corn prices averaged roughly \$1.30-1.40, with typical variations above and below this average. In the early 70's, prices lifted to a new level, near \$2.40. A similar comparison could be made for wheat and other grains, but also for livestock prices. With prices staying near the same level for so many years, is there a good argument for prices moving to a new plateau?

The combination of tight world stocks, strong world demand, and a need to encourage an increase in world acreage offer a strong argument that prices will not be returning to the levels seen since the early 70's. However the strongest case for grain prices moving to a new plateau might be in viewing the livestock sector. Specifically, U.S. livestock prices are being supported at higher prices by growing export demand. During 1995, more than half of the year-to-year increase in production was used to meet growing export demand for U.S. meat. If livestock demand is going to support higher prices in the future, then the case for U.S. and world grain prices moving to a new plateau becomes much more palatable.

Long-term forecasts from the USDA and FAPRI provide a credible assessment of grain demand in the future, and offer detailed analysis of how large grain production will need to be to meet this growing demand in the next 10 years. The major unknowns with this and any long-term forecast for world grains include first and foremost weather conditions, which can slow or accelerate growth in demand, as well as significantly altering trade flows for several years.

However another important unknown is ag policy, particularly among exporting countries, which may be of greater importance in predicting the direction of grain markets over a longer-term. U.S. ag policy is at a crossroads, and the completion of the current farm bill under debate will be an important factor in determining the future of world grain markets, and specifically what role the U.S. will play. The proposed elimination of set-aside requirements in the U.S., as well as reducing the number of acres in the Conservation Reserve program, will go a long way in determining the dynamics of world grain markets in the next decade.

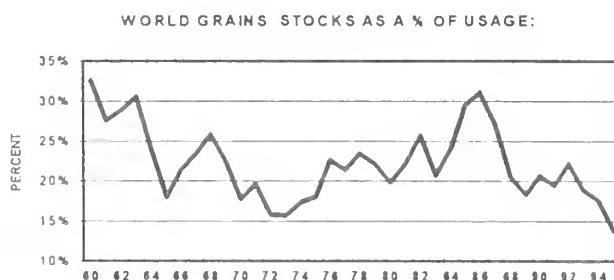
The outlook for U.S. and world grain markets appears very positive over the next 5-10 years. Strong growth in demand is expected, particularly from developing countries. The case for additional grain acreage being needed is clear, due to growing demand but also the current tight world stocks situation. The most clear risk is with greater dependence upon the developing countries to lead the growth in demand, so comes a greater chance of political and economic instability.

U.S. and Global Grain Markets Beyond 1995/96

Bill Lapp
Manager of Economic Research
ConAgra, Inc.

TIGHT WORLD GRAIN STOCKS

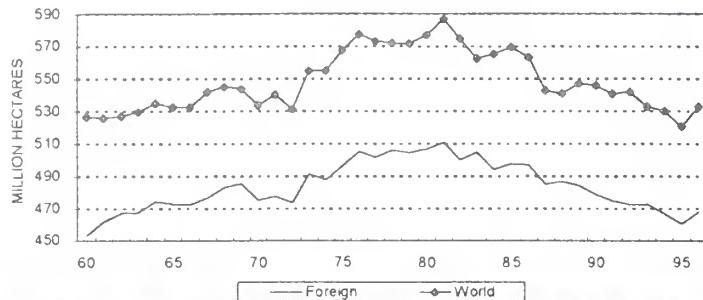
- World Stocks at tightest level since USDA began measuring in 1960



LOW WORLD GRAIN ACREAGE

- World Grain Acreage Has Been Declining Since 1981, Now Lowest on Record

WORLD & FOREIGN GRAIN AREA
(1996 PROJECTED)

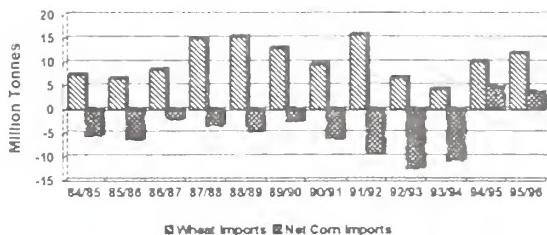


DEVELOPING COUNTRIES BOOST WORLD GRAIN DEMAND

- CHINA IS MOST TALKED ABOUT
- ECONOMY GROWING 10% PER YR +
- 1.2 BILLION X ANYTHING = ALOT
- HUGE POTENTIAL GOING FORWARDBUT THERE IS POLITICAL RISK

CHINA RECENTLY SHIFTS TO NET IMPORTER OF CORN, AND REMAINS LARGE WHEAT IMPORTER

Chinese Wheat Imports & Net Corn Imports

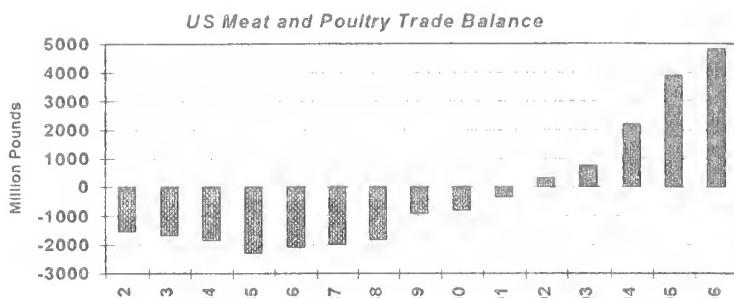


DEVELOPING COUNTRIES BOOST WORLD GRAIN DEMAND

- ASIAN POTENTIAL STRONG IN OTHER COUNTRIES BESIDES CHINA
- ECONOMIES GROWING 5-10% FROM LOW BASE WILL FIRST IMPROVE DIET WITH INCREASED INCOMES
- BRIGHT OUTLOOK FOR U.S. GRAIN & MEAT EXPORTS GOING FORWARD

U.S. MEAT EXPORTS RISE SHARPLY

- NOW EXPORTING 7% OF PRODUCTION
- MAJOR MARKETS: SOUTHEAST ASIA, MEXICO, JAPAN, AND RUSSIA

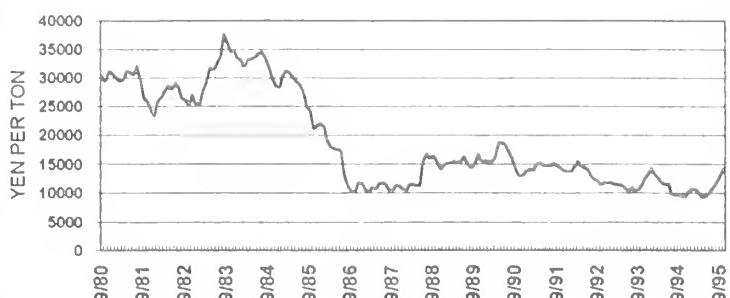


U.S. COMPETITIVE POSITION HAS BEEN IMPROVING

- TRADE AGREEMENTS (GATT, NAFTA) HELP LOW-COST PRODUCERS, INCLUDING THE U.S.
- U.S. AG POLICY APPEARS TO BE HEADED IN RIGHT DIRECTION
- WEAKNESS IN DOLLAR ALSO SUPPORTIVE TO U.S. EXPORTS OVER LONG-RUN

WEAKNESS IN DOLLAR HELPS U.S. GRAIN EXPORTS

U.S. GULF CORN PRICE. YEN/TON



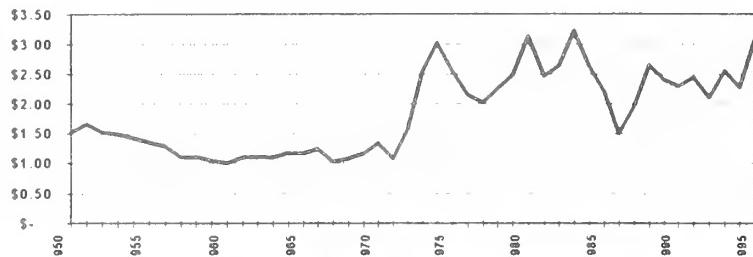
GRAIN PRICES

- JOB OF THE MARKET IN COMING YEARS IS TO REVERSE THE DECLINE IN ACREAGE TO MEET GROWING DEMAND
- CHANGES IN POLICY CAN HELP BRING BACK ACREAGE
- HOWEVER BIGGER IMPETUS FOR HIGHER ACREAGE IS HIGHER PRICES
- ARE WE MOVING TO A NEW PLATEAU IN GRAIN PRICES??

CORN PRICES: 1950-1995

- U.S. FARM PRICES WERE \$1.20-1.60 IN THE 50S & 60S -- MOVED TO \$2.20-2.80 SINCE EARLY 70S. IS ANOTHER JUMP IN PRICES DUE TO OCCUR?

AVERAGE U.S. FARM CORN PRICES: 1950-95



OUTLOOK GOING FORWARD

- ① FOREIGN DEMAND FOR GRAIN/MEAT WILL DRIVE MARKETS
- ② U.S. AG POLICY IMPORTANT IN DETERMINING U.S. PARTICIPATION
- ③ GRAIN PRICES AT A HIGHER PLATEAU?
- ④ PLENTY OF RISK STILL LIES AHEAD

FOREIGN DEMAND DRIVING MARKETS

- GROWING INCOMES IN DEVELOPING COUNTRIES PAINTS A BRIGHT PICTURE FOR EXPORTING COUNTRIES OVER THE NEXT 10-20 YEARS
- REINFORCED BY CURRENT TIGHT WORLD AND U.S. GRAIN STOCKS
- THOSE AREAS ABLE TO INCREASE ACREAGE WILL BENEFIT MOST

U.S. AG POLICY HEADED IN THE RIGHT DIRECTION

- U.S AG POLICY AN IMPORTANT PART OF DETERMINING U.S. PARTICIPATION IN GROWING WORLD DEMAND
- PASSING FREEDOM TO FARM IS A BIG STEP IN THE RIGHT DIRECTION
- ELIMINATION OF SET-ASIDES, PLANTING FLEXIBILITY & MARKET-CLEARING LOAN RATES ALL SUPPORTIVE
- CONSERVATION RESERVE PROGRAM DECISIONS WILL BE VERY IMPORTANT

PRICES COULD MOVE TO A NEW PLATEAU

- WORLD ECONOMIC GROWTH AND WEAK DOLLAR SUPPORTIVE
- NEED TO BRING BACK ACREAGE WILL DRIVE INCREASE IN
- GRAIN MARKETS HAVE BEEN TRADING AROUND SAME LEVEL FOR ROUGHLY 20 YRS

KEY RISKS GOING FORWARD

- BIGGEST RISKS ARE PROBABLY POLITICAL - BIGGEST GROWTH IN DEMAND COMES FROM COUNTRIES LESS STABLE POLITICALLY
- OVERALL THE FUTURE HOLDS GREAT POTENTIAL, BUT PROBABLY SOME HICCUPS ALONG THE WAY
- U.S. POLICY DECISIONS CRITICAL IN DETERMING THE ROLE OF U.S. AG

INTERNATIONAL AND DOMESTIC DAIRY OUTLOOK

James J. Miller
Agricultural Economist, Commercial Agriculture Division
Economic Research Service

International dairy prices in 1996 are expected to remain relatively strong but to run lower than during late 1995. Russia and the Arab countries are expected to take fairly sizable quantities at relatively high prices and world stocks are very low. However, some butteroil users are cutting imports and supplies will be up from Oceania and (to a lesser extent) the U.S. and the European Union (EU). Butter prices are projected to stabilize later in the year, once the current downward adjustment is completed.

Dry milk prices probably will drift lower in coming months. Mexico and Algeria have not been importing as much as in the past. Oceanic supplies are larger, and buyers are holding back as much as possible to see how low prices might go. However, price declines will be limited by the virtual absence of intervention stocks and lower exports from the U.S.

In the longer run, butter prices are projected to be fairly stable. However, nonfat dry milk prices are expected to move slowly higher as demand grows from East Asia. The U.S. is expected to be a commercial butter exporter, but a small price gap is projected to persist (under current policy) for skim solids.

Cheese markets probably will be unsettled because of the GATT. European supplies will be restricted, making international markets quite sensitive to New Zealand's and Australia's ability to produce larger and more diverse amounts of cheese. During the next 5 years, the U.S. is not expected to export much cheese. However, individual companies may find significant opportunities for cheese and other products in nearby markets, markets where Americans have marketing advantages, or markets for dairy-based products with substantial further processing.

The 1996 Outlook

U.S. milk production in 1996 is projected to rise slightly, as longer-run structural forces overcome higher feed prices. Concentrate prices will be up sharply and prices of good quality alfalfa hay remain high, particularly in the West. However, higher milk prices are expected to offset a significant share of the rise in feed costs. Cost pressures are not projected to cause much delay in western expansion or in development of "new style" operations in northern areas. Meanwhile, cull cow prices will stay low, and the replacement heifer herd is large. Milk cow numbers are expected to decline about 1 percent in 1996, slightly more than in 1995.

The lowest milk-feed price ratios since the mid-seventies will trim expansion in 1996 milk per cow. Farmers will be conservative about increases in concentrate feeding, and growth in the number of cows receiving bovine somatotropin (bST) may slow. Milk per cow is projected to increase less than 2 percent in 1996, about the same as 1995's weather-limited rise.

The 1-percent rise in milk production is expected to be easily absorbed by expansion in commercial use. Sales of milkfat and skim solids are expected to increase 1 to 2 percent in 1996. Butter exports are expected to absorb the available butter, and domestic cheese sales are expected to grow. Fluid milk sales and nondairy use of nonfat dry milk are projected to be steady.

The 1996 surplus of skim solids will be small, while the milkfat surplus could be very small. Removals of skim solids are projected to be equivalent to 2 to 4 billion pounds of milk and will be mostly exports under the Dairy Export Incentive Program (DEIP). The milkfat surplus could be less than 1 billion pounds milk equivalent.

Tight markets are expected to generate higher milk prices, particularly during the first half. The 1996 average milk price is projected to rise 3-6 percent from 1995's \$12.78 per cwt, to possibly the highest since 1990. Prices will be particularly sensitive to domestic demand for skim solids, variations in milk production, and international butter prices.

The Intermediate Outlook

Milk production in the intermediate run is projected to rise about 1.5 percent annually. Milk cow numbers are expected to decline less than 1 percent per year. Resources probably will slowly continue to leave dairying, particularly in areas of the most marginal soil quality. However, these exits are projected to be largely offset by continued -- but slower -- expansion in western milk production, emerging growth in parts of the Plains, and further development of "new style" farms in core northern production areas. These new style farms are much larger, require less investment per cow, use a much higher share of purchased inputs, and employ industrial-style division of labor.

Milk per cow is projected to grow about 2 percent per year. Milk-feed price ratios will run considerably lower than during the past 10 years. The incentive to boost milk per cow with heavy grain feeding will be less. However, use of bST is believed likely to increase gradually. More farmers probably will inject a larger share of their herds as expertise in profitable use grows.

Domestic demand is projected to grow slowly. Cheese sales are expected to rise and dairy ingredients will be inexpensive ways of boosting quality in many processed foods. In general, relative retail prices will favor expanded commercial use of dairy products.

Expansion in domestic dairy demand is not anticipated to keep pace with growth in milk supply, resulting in the slow erosion of inflation-adjusted prices. However, some increase in nominal prices is expected as future supply shifts are not projected to be as large as those of the eighties.

Key Uncertainties

Even small differences in annual rates of change can substantially alter the picture after a few years have passed. A number of uncertainties can be identified as having the potential to substantially affect domestic market conditions and our competitive position in international markets.

Cheese uses more than 40 percent of the milk supply and growth in cheese sales has been a major force expanding overall commercial use. At some point, Americans will no longer wish to eat more cheese. When that occurs, growth in dairy demand will slow considerably.

The recent breakup of some longstanding product trends also raises demand uncertainties. Sales trends for individual types of fluid milk have shifted in recent years, dramatically so in some cases. The net result seems to be stagnant total sales instead of fractional increases. The difference between small increases and small decreases would be substantial in 5 years. Use of nonfat dry milk in processed foods in recent years seems to have reversed a long downtrend. This reversal is quite plausible in light of recent conditions, but the future direction of such sales is quite uncertain.

Availability of high quality alfalfa hay will be a more important constraint on expansion of western milk production. During the last 2 years, dairy demand has bid up the price of high quality alfalfa throughout the West, despite heavy hay production. Further expansion in the dairy herd will require more alfalfa output, boosting the proportion of high quality hay, or learning to use poorer forage -- not just finding remaining pockets of underutilized alfalfa. Milk production will continue to grow, but alfalfa supplies will significantly affect the rate.

Structural adjustment in the Midwest and Northeast will be affected by the development of new style dairy farms and the success of low-input dairying. The projections imply that industrial type dairy farms will slowly increase in importance, as the technology and management is adapted to northern conditions. Similarly, the projections do not imply that shifting to intensive pasture management to provide a significant share of feed will greatly slow the exit of resources from dairying. This style operation may extend farm viability of current producers but will not attract a new generation.

Learning to use bST is proving difficult. A sizable group has found themselves at the edge of profitable response. If these producers unlock the secret of profitability, bST use could jump. On the other hand, producers could well decide the returns from bST are not worth the additional management needed to use it.

Lastly, recent policy proposals have included dramatic changes in the way things are done in the dairy industry. Large disruptions would be possible during the adjustment period. Also, some features could substantially alter price alignments among domestic markets and between domestic and international markets.

A PERSPECTIVE ON EUROPEAN BUTTER TRADE

Jean-Paul Galerand
Director, Dischamp S.A., France

Good morning, ladies and gentlemen. First of all, thank you very much for inviting me to this important event which should allow us to have a better understanding of our mutual markets. And I shall certainly learn a lot more from all these interesting speeches in comparison with my modest contribution to your knowledge of the butter market.

My intention is to speak about butter and butterfat in E.U. and particularly about the diverse measures which are being used by the European Commission to regulate and manage this market. The target of these measures is to maintain production and consumption at acceptable levels, taking into account the specificity the E.U., where we have to stand a very high cost of milk, certainly one of the highest in the world if we exclude Japan and Switzerland.

Because of this high price policy, we had in the E.U. to face a traditional surplus of milk production which was conducive to huge stocks of "intervention" products as this surplus was withdrawn from the market under the form of butter and skimmed milk powder. To try to stop this phenomenon without depreciating the milk price, the E.U. Commission was led to establish a system of "milk quotas," (to stop production increase) in order to prevent internal prices for collapsing and to insure a minimum income to the European milk producers.

In spite of the existence of the "milk quota," the E.U. was still facing a problem of milk surplus. It was then necessary to have at the same time a policy of price support which is currently called the "intervention system."

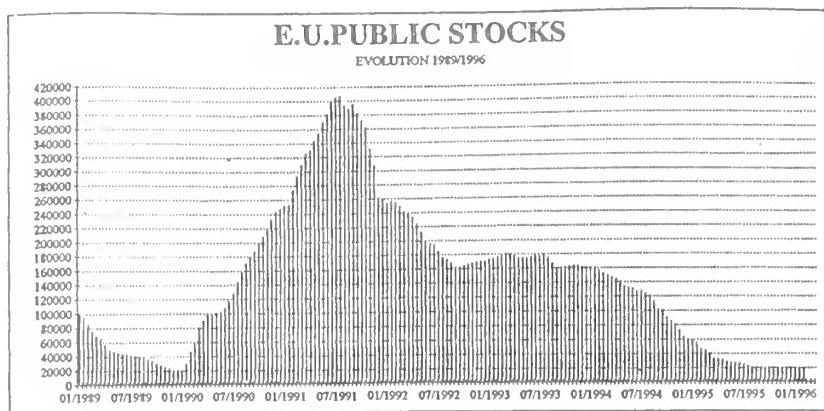
Intervention measures may be considered under four main chapters:

- price support (minimum internal price for butter and SMP),
- subsidies for industrial use (bakery and ice cream program),
- private storage scheme (to avoid big differences in prices),
- export policies (E.U. refund).

1) Price intervention on butter and skimmed milk powder.

This very well known system is based on the commitment from the E.U. authorities to buy surplus products under the form of fresh butter and/or skimmed milk powder. Official prices are established in European Currency Units (ECU's) and should the internal market price reach this minimal level, extra production would then be withdrawn from the market to constitute what we call "public stocks." These stocks will then be put on the market when necessary under special regulations and their role is to equilibrate the market against too large fluctuations of prices.

We have seen in the past that this "theoretical" function was not always efficient; as the decision to sell "public stocks" can interfere with the private market. Graph 1 shows the evolution of the so called "public stocks" during the last 7 years. You'll realize that we have come back to the quantity we had at the end of 1989, but we do not expect the coming year to look like the evolution of 1990/1991.



For your information the present E.U. support price is equivalent to U.S. \$3,860 per metric ton which corresponds to approximately \$1.75 per pound.

2) Subsidies for industrial use.

For more than 25 years, there has been a scheme to encourage milk fat consumption into manufacturing of cakes and ice cream products. This industry has developed quite well over this long period and we are reaching today a level butter consumption approximately 420 000 tons per year (927 million pounds). The level of subsidy is also fixed by the EU committee. The present level is at \$1,580 per ton of butter (to be compared with the export refund, which is \$2,090 per ton).

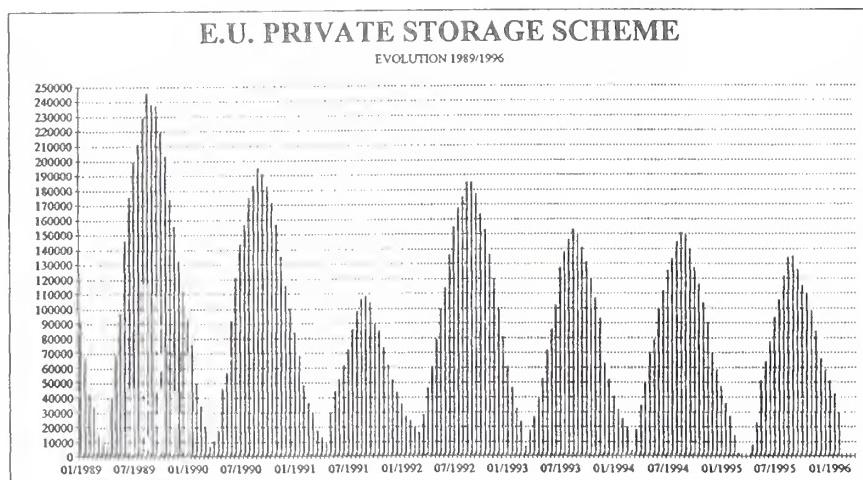
Although the subsidy has been considerably reduced during the last few months, consumption of butter under this regulation remains quite important and we expect it to be over 400,000 tons for 1996, particularly with three new member states (Finland, Sweden and Austria) who are adapting these new rules to their bakery and ice cream industry.

3) Private storage scheme.

This original measure is certainly the most efficient and useful to prevent European prices to fluctuate and to level demand with offer without too much state intervention. The principle is simple: Operators can store butter at their own risk from the 15th of March to the 15th of August. They must keep it for a minimum of 90 days and a maximum of 210 days. Butter must be grade AA, compared with U.S. standards of quality.

During the storage period, subsidies cover the actual cost of storage and finance. Rates of subsidies are decided every year by the E.U. committee, and take into consideration the finance rates and holding charges.

Graph 2 shows the evolution of the private storage scheme since 1989. You can note that the last three years have been relatively regular as far as the quantities are concerned.



We could imagine that without the private storage scheme, the E.U. commission would have bought the surplus of butter which is traditionally produced during the spring and summer period.

4) Export subsidies.

Certainly one of the most difficult tasks of the E.U. Commission is to manage the level and volumes of admirable exports from Europe to the third countries, particularly when their decisions have to meet the signed international trade agreements. The system works with established "refunds" which are fixed every two weeks in a special committee where the E.U. Commission meets representatives of the Member States. Main decisions are submitted to a vote. The export refund works quite differently than your well known "DEIP." Exporters can apply for an export licence certificate which allows them to be paid a fixed refund when the proof of export is officially presented. When they have taken such a decision, the export operation must be realized within a delay which is fixed (4 months for butter). This commitment is guaranteed by a bank security which is lost in case of failure. The E.U. commission has a permanent account of the existing export commitments and can manage the global export policy by modifying the export refund when necessary.

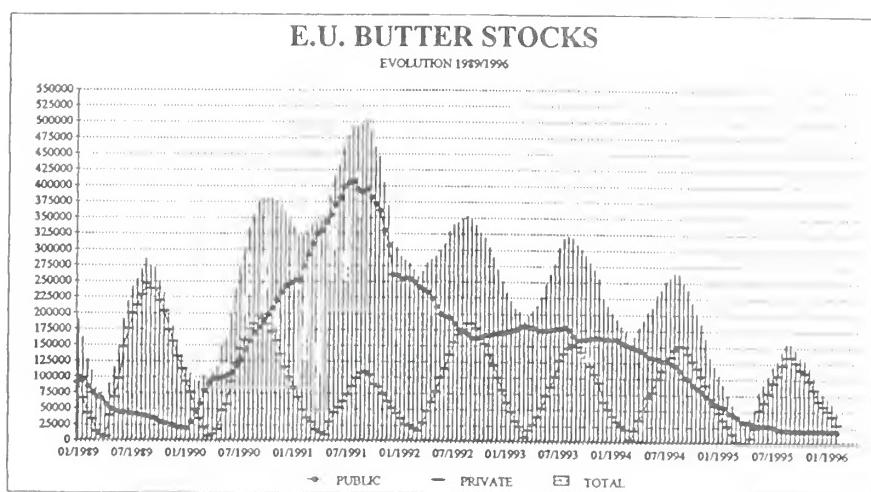
This system applies for all milk products, and we have seen that it proved its efficiency during the course of 1995. At the moment the butter export refund is worth about \$2,090 per metric ton which corresponds to \$0.95 per pound. The current E.U. butter market price is around \$4,210 today, which corresponds to \$1.90 per pound. You'll have already calculated that our export price is \$2,120 per ton at the moment, (market price less refund). All these figures refer to unsalted 82% fat butter.

I'd like to show you a last graph which is the addition of public and private stocks and their evolution since 1989. The interesting figures to compare are the apparent annual "consumption," which of course includes export figures. This theoretical "disappearance" between July and February was:

165 500 tons in 1992/93,

167 700 tons in 1993/94,

222 000 tons in 1994/95, (unusual Russian demand).



In conclusion, I think we could debate about the world acceptable price for butter. I am very concerned about your point of view on this point as it seems that world consumption is very reactive to price fluctuations and the United States has certainly an important role to play in this field, as you also produce a surplus of milk.

I thank you very much for your patience and I hope that you will be excuse my French accent. If you can bear it for a little longer, I'll be delighted to answer your questions. Thank you for your attention.

THE CHANGING GLOBAL MARKET PLACE

**Gregory Ng
Vice President, GrandMart Warehouse Club**

GrandMart was first established in January 1993 in Hong Kong and was the first warehouse wholesaling/retailing type of outlet ever found in the territory. Within 3 short years, GrandMart expanded into 7 outlets in Hong Kong, and on an international scale had also moved into Malaysia with a new store in Kuala Lumpur as well as built up strong distribution network in Macau and Southern China. With a total membership of over 60,000 at the end of last year, GrandMart has become a household name in the local community symbolising quality US products at a real bargain.

The GrandMart Revolution

Prior to the establishment of GrandMart, retailing of processed food items was very much in the hands of a duopoly who owned chains of over 400 supermarkets and 300 convenience stores. Shelf space was limited and slotting fees were very high which offered little chance for medium- and small-sized suppliers to try their products in the market.

GrandMart adopted a totally different approach. No slotting fees were levied and the customers alone decided what ought to stay on GrandMart's shelves. As such, the GrandMart buyers took a positive view towards products that had never appeared in the local market before. Products were sold in bulk and quite contrary to the local practice margins were kept to the lowest to induce fast turnover.

There were, however, skepticism about GrandMart's approach based on:

- the small size of Hong Kong's residential units and hence limited storage space at home;
- the low rate of private automobile ownership;
- local customers not being familiar with many of the US brands and labels.

In spite of such skepticism, GrandMart's insistence on selling quality products at the lowest possible prices and stocking a wide range of American-made products had worked. A recent survey conducted by the Hong Kong Economic Times, one of the top financial newspapers in Hong Kong, indicated 11% of the surveyed customers had shopped and would continue to shop at GrandMart. In addition to that, 1995 had seen a growing phenomenon of other Hong Kong retailers also actively sourcing products from the United States, a diversion from their normal merchandising practice. Today, the name "warehouse distribution/retail store" is becoming more prominent and popular in both Mainland China and Malaysia.

The Market Environment

The market areas in which GrandMart operates in fact offers many opportunities for US products.

Population is high and very concentrated. Fast economic growth in the past few years, coupled with GDP growth of over 5% per annum consistently, has led to the development of a sizable middle class income group with fairly high personal income and enough disposable cash in their pockets to pay for higher quality products.

Two other characteristics of this population are worth mentioning here. One, education is on the rise and, two, through tourism, media, education or overseas connections, this population is quite well in touch with the outside world. This means they can appreciate quality and understand value better than they used to, and are also already exposed to imported goods.

Food has always been the number one seller in these countries. In GrandMart's stores, 61% of the total sales in 1995 were in food and confectioneries. This pattern had been quite consistent in the past 3 years.

The Magic Label

What do customers look for when they come into a GrandMart store? This is a question often asked by ourselves, but many answers point to the "Made in USA" label.

Customers in Mainland China are particularly fond of American products. Even the better-educated Hong Kong and Malaysian customers tend to associate the "Made in USA" label with an assurance of high quality. This image has in GrandMart's experience fostered the sales of many US products in Hong Kong and China, even though the customers are not entirely familiar with some of the brands.

In the long run, we believe future market potentials depend very much on the ability to preserve, or even enhance, this image that the "Made in USA" label has so created. This will require conscientious decision and commitment from both the retailer and the manufacturer to not compromising quality for price and to offering the best value for money to end-users.

Bridging the East and the West

Information link between the product source and the market area is equally important. One problem GrandMart had gone through during the first year of its operation was finding the US suppliers. At the same time, many US suppliers particularly the medium- or small-sized ones and those used to targeting their business in the domestic US market only had no idea of how to start marketing their products in the Asian countries. This had resulted in a lot of lost opportunities for both sides.

GrandMart overcame this hurdle by utilising the network built inside and outside the United States by the FAS. The local Agricultural Trade Office became the key man in this linkage. They in turn directed us to the appropriate co-operators and regional trade groups such as WUSATA, MIATCO. The regional trade groups then extended their antennas into the business community either directly as well as through the State Departments of Agriculture to obtain information on suppliers for the potential

retailer. This networking system had proven to be high efficient and generally speaking effective. It is important that US suppliers are also aware of the existence of such a network and are willing to become part of it. When that being the case, US suppliers will be in a better position to access the vast potential Asian market.

The MPP Program had also assisted many US products in gaining a firm footing in our market. For new products that were not known to our market, the MPP Program provided an opportunity whereby the supplier and GrandMart could draw customers' attention to particularly the quality and taste of the product they were introducing. Without the support of MPP funding, some of the best-selling food items in GrandMart might not be doing so well today. This would be a short-term investment but a long-term gain for both business and the country.

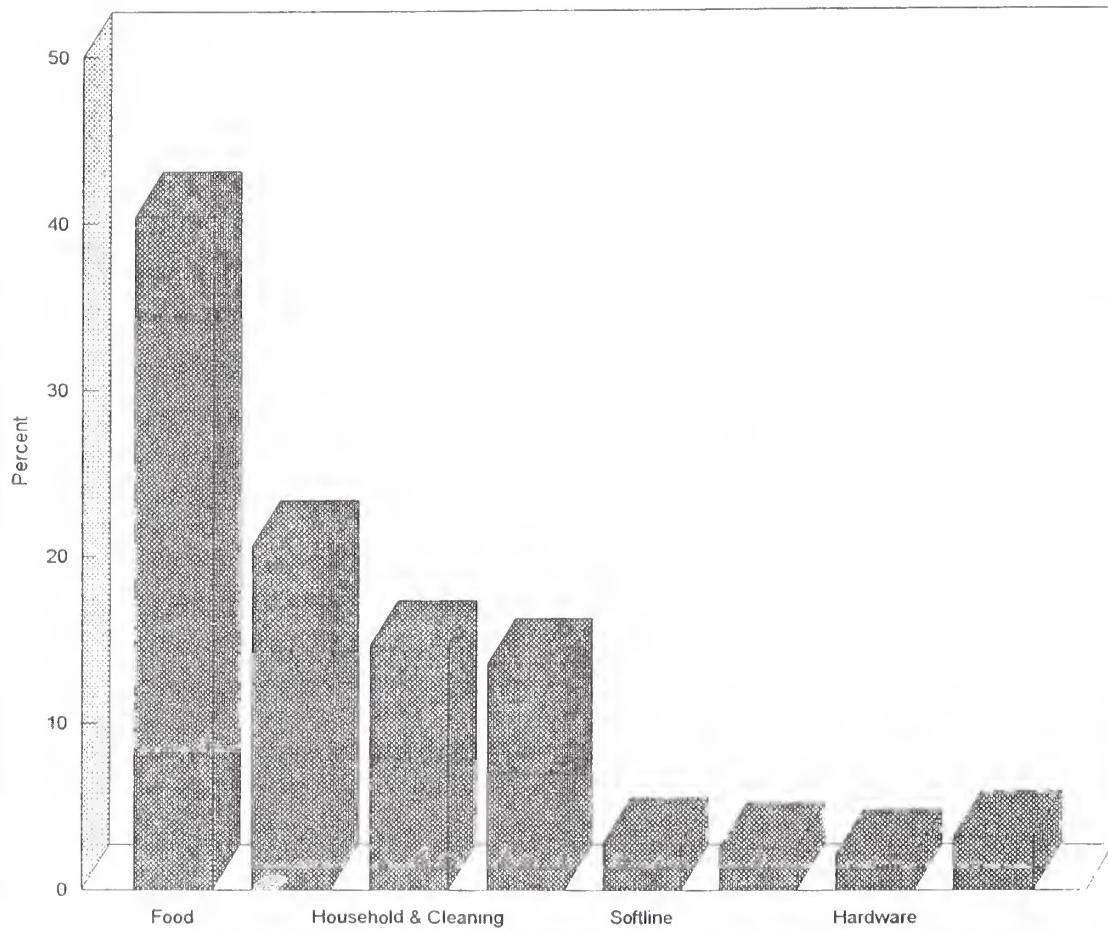
Obstacles

1. Tariff - No tariff is levied on food items in Hong Kong. However, tariff in Malaysia can be up to 30% and is even higher in Mainland China. High tariff will place some US products not competitive in the market. However, current trend indicates that we shall expect to see tariff coming down in the next few years to a much more acceptable level.
2. International Competition - Asia is as close or even closer to Australia and Europe than to the United States. This implies that US products are not only in direct competition with local-made products but also with European and Australian imports. It is therefore important for US suppliers to maintain both a practical short-term view and a long-range view of the market.
3. Culture and Religion - Local culture and religious beliefs often help or hinder the sale of certain items. For instance, Hershey's Kisses are selling extremely well in the Chinese market because of their gold-wrapping, and on the contrary few high-quality US meat makes its way into the Malaysian market because of the 'Halal' requirement.
4. Labelling Law - The general trend is for labelling regulations to become more and more sophisticated in order to protect consumer interests.
5. Internal Obstacles - Many obstacles come from within. One common observation is that some US suppliers are not willing to get their hands messy in a market they are not too familiar with and to hold a more long-term view of the market. In our opinion, flexibility will always be the key to success in the ever-changing Asian market.

An Experiment Worth Continuing

GrandMart had begun as an experiment in Hong Kong. Today, this experiment is still going on in two directions. One, the platform has moved outside Hong Kong into Mainland China and Malaysia. Two, the search for new quality US products has not stopped. The genuine belief that the market for quality US products will be even larger in the next few years has perpetuated this commitment which includes finding 3 new stores in Hong Kong, 1 new one in Kuala Lumpur and another in Johore Bahru, Malaysia within the next 12 months.

GrandMart Warehouse Club, Hong Kong
Store Sales by Category, 1995



THE CHANGING GLOBAL MARKETPLACE

Stephen P. Dees
Executive Vice President, Business Development & International Marketing
Farmland Industries, Inc.

Thank you Tim, it is a pleasure to be included on today's panel. I am especially pleased and honored to be included with Dmitry and Gregory in a discussion of *The Changing Global Marketplace*. You and the conference organizers deserve a special thank you for bringing both of these gentlemen, representing important and growing markets for our agricultural production, to today's sessions.

The farmers and ranchers that own and hold membership in the Farmland Cooperative System are excited about the potential for serving consumers around the globe. The changes occurring in today's markets are a major reason for our optimism. I personally look forward to our discussions today and the balance of the USDA outlook forum as an excellent opportunity to gain information and insight on many issues vital to the success of US producers and agribusiness.

I would like to start my discussion with a few observations about the trends that are driving change in many international agricultural markets. After reviewing these trends, I'll focus on the changing way we view consumers of the products marketed by Farmland. Before I close, I plan to relate some of our marketing experiences in Russia, Japan and particularly in Mexico.

Looking at markets around the world one cannot help but be impressed by the results of economic and trade reforms. Consumers are enjoying new purchasing powers. One of the first places additional income is expended is for food products. Buyers with the capacity to pay for goods are demanding better diets and higher quality. At the same time the combination of production constraints and trade liberalization is enabling competitive producers to expand exports.

Leading the way in transforming today's agricultural markets are three often identified trends: privatization, trade liberalization, and overall market globalization.

The breakdown of several state managed economies and a conscious effort by others to reduce central control of trade and business operations is opening trade opportunities for many of us. Privatization of former state enterprises and de-monopolization of factories, farms, transportation, telecommunications, and consumer services means increased complexity in most marketing activities. More importantly the efficiencies gained and the markets opened by this trend are resulting in relationships with new commercial partners.

Those new partners are serving a consumer market that responds more to economic signals than to the political decisions that guided consumption in the past. The new level of economic decision making that is prevalent in today's markets parallel those economic forces that guide the production of food. In the end, producers, traders, and the consumers all benefit from increased economic efficiencies in the market.

The reforms to trade policies negotiated under the Uruguay Round Agricultural Agreement are already having impact on global trade patterns. The reduction in export subsidies, measures to increase market access, and control of trade-distorting domestic production subsidies, are real gains for trade of many agricultural products. Regional agreements like NAFTA are providing similar opportunities. Trade liberalization is one trend that needs continuous reinforcement from the political systems that guide the reforms. I am cautiously optimistic that the process of negotiation, reform, and implementation will result in fully liberalized agricultural trade.

Globalization of markets is becoming increasingly possible as new technologies are implemented. Information flow has improved so dramatically that buyers and sellers around the globe now have almost instantaneous access to market information and to each other. Importantly, access is becoming increasingly cost effective and greatly improved in quality. As improved technologies permit us to overcome the economic, political, and social barriers to trade, the ability to compete on the basis of price, quality, and performance becomes more important.

These three trends in particular support trade in an environment of more people, with more money to spend. There are more buyers and sellers of agricultural products. Those players will participate in an expanding market with more products and more technologies involved in producing, processing, and transporting products. Most importantly all these influences result in changes that translate to MORE CHOICE for all players and especially for the consumer.

As an exporter of agricultural products, it is fundamental that we deal with the consumers' developing capacity to choose. Consumers want - and we in agriculture must deliver - a reliable supply of a high-quality product that is safe, nutritious, affordable, healthful, uniform appearance and quality. In addition, consumers have increased their expectations that food products will be produced in an environmentally sound manner.

These conditions require that we, as agricultural producers, become more cost efficient, more consistent, more quality-driven and more sensitive to environmentally sound practices. As a representative of the Nations' largest farmer-owned food business, I am confident in our intent to meet these challenges.

We know that agricultural producers can no longer rely on a strategy of simply maximizing yields. Today's food systems must optimize what goes in and what comes out of our agricultural processes so that we, as producers, can prosper, our natural resources can be renewed and world consumers can experience what the US consumer has benefited from for years -- an abundant, safe and affordable food supply.

At Farmland, we have learned much from our customers and partners. Dmitry explained his operations in the Former Soviet Union. We, at Farmland, are extremely pleased to call Dmitry and SoyuzKontract our partners and friends. Their capacity and understanding of the choices and capacity of that market are unparalleled.

We have also come to recognize, again through experience gained with our trading partners, important changes occurring in the Asian-Pacific Rim economies and trading environment. In these markets, consumer incomes continue to grow substantially and many market barriers are beginning to be lowered. As a result, consumers in the Asian Pacific represent better than consumers of any other particular region the phenomenon of new purchasing power and demand for better diets.

The Farmland System exports corn, milo, wheat, soybeans and feedstuffs. We also export value-added goods, including meat products. Our experience is that sales of consumer-oriented products (value-added) holds great opportunity for the US producer. For instance, in 1995, over 80% of the fresh pork processed at our Crete, Nebraska plant was exported to the Asia-Pacific. This plant is an example of how we are providing the consumer with the product of choice. Most of the plant equipment and operations are specifically designed to meet the expectations of our export customer. In a similar fashion, our beef company joint-venture, National Beef, is involved in a major effort to update and re-engineer production capacity to meet the very specific preferences of our Japanese customers.

Nevertheless we recognize a large and growing market in the Asian-Pacific for bulk grains. Growing consumer demand for meat and bread in large population centers like China and Indonesia represent what may be our best opportunity for bulk grain export sales growth.

Mexico Experience

Another very important market for the Farmland System is Mexico and Latin America. Farmland's first office outside the US was in Mexico. I opened that office in 1993 and headed it up for two years. It was a very interesting two years. We saw it go from one of the fastest growing, most exciting emerging markets in the world to an economy in crisis. Unquestionably, Mexico is struggling today. However, to its credit, Mexico has maintained its commitment to open trade and privatization, even though many Mexicans blame the changes for their problems. It looks like Mexico will stay the course and that the Government's austerity measures are working to turn the economy around.

But even with the disastrous economic situation we have seen in the last year and a quarter in Mexico, the importance of Mexico as a market for American agriculture and particularly for Midwestern American producers is clear. Despite the devaluation, the lack of purchasing power and all the other problems, Mexico has continued to be an extremely important market for American grain and American meat. The latest numbers available to us indicate that last year Mexican imports of U.S. wheat, feed grains and oil seeds amounted to over 8 million metric tons compared to 9,128,000,000 metric tons for 1994. Beef and pork exports to Mexico amounted to approximately 46,000 metric tons versus 110,425 metric tons the preceding year. As you can see, the market continues to be important. From Farmland's standpoint, our sales in all areas of product, including grain, red meat, and feed ingredients increased substantially in 1995, a year in which Mexico's economy was very likely at the lowest level we will ever see it.

We know from past experience what the Mexican consumers like. They like American products, they like American quality. We know the potential for that market is incredible and we are very committed to being there as that market comes back.

FINANCIAL PROSPECTS AND MANAGEMENT ISSUES CONFRONTING U.S. FARM BUSINESSES

Mitchell Morehart, John Jinkins, Janet Perry, James Ryan, Neal Peterson,

Judith Sommer, Robert Collender, and Linda Foreman

Agricultural Economists, Economic Research Service, USDA

Farm Sector Financial Forecasts for 1996

The farm sector 1996 financial forecasts were prepared in November 1995 as part of the USDA baseline process. The income forecasts incorporate commodity production, acreage, and price forecasts prepared by analysts throughout the Economic Research Service (ERS). Production expense forecasts considered the latest projections for general inflation, input prices, acreage, and livestock production. Continuation of current law was assumed for government farm programs. Highlights of the 1996 forecasts include:

Record potential for crop cash receipts, while livestock receipts remain flat

Strong crop receipts should bolster 1996 farm incomes. Crop receipts are forecast at \$98-\$103 billion, above 1995's potential record of \$97 billion. High expected feed grain prices stemming from tight world supplies are a major reason for this potential record forecast. In contrast to crops, 1996 livestock cash receipts will not be especially vibrant. Livestock cash receipts are forecast at \$85-\$89 billion, compared with an \$88 billion average in 1990-94. Sales of cattle and calves make up the largest proportion of gross cash income of any commodity, 20 percent in the 1990's. Despite growing exports, large supplies will continue to dampen cattle's prices.

Direct government payments forecast to be the lowest in the 1990's

Direct government payments are expected to reach the lowest level since the early 1980's at \$3-\$5 billion. In 1990-94, direct government payments averaged \$10 billion and were 5 percent of gross cash income. Again high expected feed grain prices influence the forecast. As these prices increase, income support payments decrease.

Expenses continue to rise

Higher farm production expenses are expected in 1996, continuing the pattern of the last several years. High prices and fewer requirements to fallow land to be eligible for income support payments will encourage larger plantings. This larger planted acreage

should increase purchases of inputs like seed and fertilizer, pushing expenses upward. Also, nitrogen fertilizer prices remain high. This could be especially important in a year when corn plantings, which require applications of nitrogen fertilization, are expected to increase. Expected high feed grain prices coupled with large cattle inventories could increase feed expense.

Income of farm households to be close to national average

Farmers are expected to have less cash available in 1996 to support their families, pay debt, purchase equipment, or for other needs. Net cash income is forecast to be \$43-\$53 billion in 1996 compared with \$53 billion average net cash income in 1990-94. Net farm income is forecast at \$37 to \$47 billion for 1996. This would represent an increase over the 1995 estimate of \$39 billion, but below the \$44 billion average of the 1990-94 period.

Many farm operators have off-farm earnings in addition to their farm incomes. A measure of the total income available to farm operator households is made when off-farm earnings are combined with farm business earnings. Average farm household income is forecast to be between \$42 thousand and \$47 thousand in 1996. This would mean that, on average, farm households will have average incomes similar to those of other U.S. households, in 1996.

Farm equity forecast to grow

The value of the assets farmers own should increase in 1996, mostly because real estate values are forecast to rise. Also, farm debt may increase to the highest level since 1986. Given our income forecasts, this debt load could be more than 60 percent of the debt that farmers can support with their farm earnings. Despite the increase in debt, interest payments may decline due to declining interest rates. Asset values are expected to increase more than debt, resulting in an increase in farm equity.

USDA Baseline Projections

USDA's baseline analysis presents a long-run scenario for the agricultural sector under current agricultural law, with no shocks, and reflects specific assumptions regarding the macro economy, weather, and international developments. These baseline projections were used to examine financial prospects for the agricultural sector and identify emerging issues as we approach the turn of the century.

Farm income stable

Net farm income, which is a broad measure of the overall profitability of production agriculture, is expected to remain in the \$38-\$42 billion range throughout the baseline

period. When adjusted for inflation, net farm income declines by 25 percent over the baseline period. Net cash income, which represents the amount of income available to farmers for investment, retiring debt, and other expenses, should stabilize at a slightly lower level than the \$53 billion average for first half of the 1990's.

Growth in crop receipts moderates, while livestock receipts recover from the early 1990's downturn

Total crop receipts increase modestly compared with the 1991-95 period when receipts increased by 18 percent. Receipts increase for most crop commodities, with the exception of cotton and tobacco. Corn, soybeans, and wheat were the major driving force behind the 1991-95 expansion in crop receipts, averaging annual increases of 4 percent. Receipts for these commodities are expected to increase by more than 1 percent a year during 1996-2000 period. Receipts for vegetables, fruits, tree nuts, and nursery and greenhouse commodities, which account for over one-third of total crop receipts are expected to maintain a 3 percent annual increase through the year 2000.

Red meat receipts (primarily cattle, calves, and hogs), which represent more than half of total livestock receipts, are expected to recoup the \$5 billion lost during the 1991-95 period by the year 2000. This should help to ensure that total livestock receipts increase in nominal terms over the baseline period. Receipts for poultry and eggs, which have led all livestock commodities in growth over the last several years, should fall back to a more modest average rate of growth of 2 to 3 percent per year.

With falling direct government payments, the sector moves toward greater market dependence.

Direct government payments include price support payments for crops, conservation program payments and disaster assistance. Income support payments decline over the baseline since market prices for program commodities (particularly feed grains) are expected to remain relatively high compared with target prices that were fixed in the 1990 farm legislation. Payments made under the conservation reserve programs remain in the \$1.5 to \$1.7 billion range and represent an increasing proportion of total direct payments.

Cash operating margins tighten

Increases in commodity receipts are not expected to keep pace with farm production expenses. As a result, cash operating expenses represent an increasing proportion of gross cash income, peaking at about 79 percent by 2005. Expenses for manufactured inputs and hired labor are expected to rise faster than farm origin inputs. Interest expense should continue to trend downward with modest increases in debt and relatively flat interest rates.

Farm sectors' overall financial position should remain strong

Farm assets are expected to increase less rapidly than over the previous five years, largely due to moderation in the growth of farm real estate values. The sector's debt-to-asset ratio falls in the near-term, before rising back to more recent levels by 2005. Farmers continue a slow accumulation of debt that reaches \$167 billion by 2005 which is still well below the peak of the mid-1980's. There should be ample cash available to repay debt, although repayment capacity gradually weakens toward the end of the baseline period. With asset values increasing more than debt, farm equity rises in nominal terms.

Selected farm sector financial measures, 1990-2000P

	1990	1991	1992	1993	1994	1995	F	1996 P	1997 P	1998 P	1999 P	2000 P
Billion dollars												
Cash receipts:												
Crops	80.3	82.0	85.7	87.1	91.6	97.1	101.2	103.7	104.0	105.7	108.6	
Livestock & products	89.2	85.7	85.6	90.0	88.1	87.2	87.4	88.2	90.9	93.6	95.1	
All commodities	169.4	167.8	171.3	177.1	179.7	184.2	188.6	191.9	194.8	199.2	203.7	
Farm-related income	8.2	8.3	8.2	9.1	9.2	9.3	9.6	9.8	10.1	10.3	10.6	
Government payments	9.3	8.2	9.2	13.4	7.9	6.2	3.7	4.4	4.9	4.7	4.1	
Gross cash income	187.0	184.3	188.6	199.6	196.7	199.7	201.9	206.1	209.8	214.2	218.3	
Cash expenses	134.1	133.9	133.2	141.5	146.9	148.4	153.7	155.6	159.0	162.7	167.0	
Net cash income	52.9	50.4	55.4	58.1	49.8	51.3	48.2	50.4	50.8	51.5	51.4	
Value of inventory chg.	3.5	-0.2	4.2	-4.5	8.7	-1.2	4.7	-0.4	-0.4	0.2	0.4	
Non-money income	8.0	7.7	7.8	7.9	8.1	8.2	8.4	8.6	8.7	8.9	9.1	
Gross farm income	198.5	191.8	200.5	203.0	213.5	206.7	215.0	214.3	218.2	223.3	227.8	
Noncash expenses	16.8	15.5	15.2	15.3	15.5	15.3	15.2	15.7	15.8	16.0	16.2	
Operator dwelling exp.	4.2	4.1	4.2	4.1	4.3	4.3	4.3	4.3	4.3	4.4	4.4	
Total production exp.	153.7	153.4	152.6	160.9	166.7	168.0	173.2	175.7	179.1	183.0	187.6	
Net farm income	44.8	38.4	47.9	42.1	46.7	38.7	41.7	38.6	39.1	40.3	40.2	
Farm assets	848.6	843.8	868.4	902.9	933.5	956.6	989.5	1008.3	1029.7	1042.8	1054.6	
Farm debt	138.0	139.2	139.1	142.0	146.8	150.7	155.0	153.9	154.8	155.7	157.6	
Farm equity	710.6	704.5	729.3	761.0	786.7	805.9	834.5	854.3	874.9	887.0	896.9	
Percent												
Debt/equity ratio	19.4	19.8	19.1	18.7	18.7	18.7	18.6	18.0	17.7	17.6	17.6	
Debt/assets ratio	16.3	16.5	16.0	15.7	15.7	15.8	15.7	15.3	15.0	14.9	14.9	

F = Forecast. P = Preliminary. Numbers may not add due to rounding.

Implications for U.S. Farms and Ranches

Declining government support and greater reliance on market forces will increase production and price risk in the sector. Financial projections for the entire farm sector mask the diversity of farming operations. Allocating net cash income among types of farms, sales class, and region reveals patterns of change in net cash income. Some of the more significant trends are:

- **Farms specializing in red meat and cotton production could see the largest declines in net income.** The income outlook for farms specializing in cattle, hogs, and sheep (red meat farms) remains relatively bleak through 1997 when an upturn in prices is anticipated. A high percentage of these farms are small in economic size and earn little of their income from crop sales. Feed expense represents about 20 percent of total expenses on these farms making them vulnerable to high grain prices. The net cash income of cotton farmers is expected to fall in small increments each year to 2000 when the net cash income begins to rise again. The downward adjustment in net cash income is in response to decreases in output from the peak output anticipated for 1996.
- **The largest increases in net cash income should occur for farms that specialize in poultry, fruit, or vegetable production.** Poultry farms are projected to have the largest increase in net cash income and the second largest percentage increase between 1996 and 2000. Exports of chicken increase by 47 percent. The increase in net cash income for poultry farms accounts for slightly over 80 percent of the projected increase in net cash income for all livestock farms. Fruit, and vegetable farms are expected to have the second largest increase in net cash income during the 1996-2000 period. Production of both fruits and vegetables rise. Grower prices for vegetables increase 9 percent while fruit prices increase 8 percent. Net export value of fruits doubles between 1996 and 2000 while the vegetable net export values increase 58 percent.
- **Net cash income could decline proportionally more on small farms.** The sum of net cash income for farms with sales less than \$40,000 is negative in 1996 and this loss in net cash income increases by 2000. These farms receive a relatively small percentage of total income from crops and depend more on government payments as a source of income when compared with larger farm operations. However, most operators of the smallest farms earn more from off-farm work than from operating a farm business.
- **Net cash income could decline proportionally more in the South Central part of the country.** Income prospects are less favorable in the South Central region (TX, OK, AR, LA, and MS) since this area has a high concentration of cattle and cotton producers. In addition, a relatively small percentage of the region's gross farm income come from cash grains; the commodities anticipated having strong increases in cash receipts.

Emerging Issues

Considering the financial environment depicted by the baseline, several issues will have important implications for agricultural producers as they attempt to manage through these trends and compete in the world marketplace.

Risk Management and Investment In New Technology

Risk and uncertainty influences the efficiency of resource use in agriculture and the decision-making process of farmers. Five major sources of business risk influence farmers' decisions: production, marketing, technology, legal/social, and financial. Production risks are usually random occurrences such as weather, disease, or pests that contribute to yield variability. Technological risk is the potential that current decisions affect future returns. Two types of risk response are available to farmers: actions to reduce risk and changes in the decision process. Technology affects both.

The 1994 FCRS queried farmers about the use of specified technologies. Conservation tillage was used by just over half of commercial-size farms. Use of tillage practices were lowest in the Southeast, Delta and Pacific region. Over a quarter of all commercial operators were using computerized bookkeeping, with almost 60 percent of operators from the largest farms using computers. Computer use was heaviest in the Mountain and Pacific regions. Integrated pest management and nitrogen crediting were the next most often used technologies. Solar energy was used by more than 10 percent of farmers, and mostly in the Plains regions. Solar energy was the only technology on our list that was employed most often by small commercial farms. Other technologies such as computer-aided chemical application, growth hormone, on-line marketing services, drip irrigation, and computerized feeding, milking, and waste management systems were used mainly by larger-farm operators. Farmers in the Pacific and Mountain regions were the most likely to have employed at least one of the listed technologies.

A primary goal for farmers in the next decade is to maintain their relative share of the domestic and international market. U.S. farmers will be applying genetic engineering, electronics, agricultural engineering, chemical and pest management to generate additional capacity of production to meet expanded world demand. Constraints on land, water, and energy will compel farmers to adapt agricultural production, creating more reliance on science and technology, and greater entrepreneurial skills to handle that technology. USDA has typically supported research on agricultural growth and structure. Extension has made it a priority to study changes in the sector through a project called "Managing Change in Agriculture." ERS is contributing to this project by using data collected from the Farm Costs and Returns Survey (FCRS) to analyze the risk management strategies used by farmers as it relates to financial performance of farm businesses.

Size structure of farms

Concentration in farming is generally defined as fewer and larger farms, with the largest farms controlling an ever-increasing share of agricultural resources and producing an ever-increasing share of agricultural output. However, as farm numbers decrease and concentration continues, the change is not simply the growth of large farms at the expense of smaller farms. Instead, the pattern emerging in agriculture is a dualistic distribution of farms, with large and small farms increasing while mid-size farms decline.

What appears to have contributed to this trend are differences in factors that affect economic viability of small and large farming operations. Off-farm income dominates farm operator household income (and often offsets a negative farm income) for smaller farms. As a result, the viability of these farms is mainly a function of general economic conditions, and more specifically the availability of off-farm jobs. Survival of large farms depends more on the financial health of the agricultural sector as influenced by production, farm input and output prices, agricultural trade, and technological advances, as well as the availability and cost of credit, and government programs and policies.

Real value of sales was used to examine the historical distribution of farms by value of sales in order to eliminate the effect of farm product price changes. Despite a 40 percent drop in the number of farms over the last three decades, the number of farms with real value of sales above \$100,000 has increased. Thus, the loss was absorbed by the two lowest sales classes as their share of total farms decreased from about 95 percent to less than 85 percent. However, in the 10 year period from 1982 to 1992 the share of farms in the lowest sales class leveled off, while the share of mid-size farms (\$40,000-\$100,000) continued to drop.

Average annual changes in the two largest real value of sales classes have been consistently positive and higher than the lower sales classes. The \$100,000-\$250,000 real value of sales class generally gained farms since the mid 1960's, but at a slower rate than the largest classes. Farms in the lowest real value of sales class generally fell during the 1964-1992 period, but at a decreasing rate, and the rate of loss leveled out during 1982-92. In contrast, the mid-size real value of sales class (\$40,000-\$100,000), which was growing during the first five years, lost farms in every subsequent time period.

By 1987-92, the fastest-growing sales class was farms with sales \$500,000 or more, and the sales class losing farms the fastest was the \$40,000-\$100,000 group. Based on the observed trend, during the next ten years the largest sales class is expected to increase at an increasing rate, the \$250,000-\$500,000 sales class will increase, but more slowly. The \$100,000-\$250,000 sales class will begin to decline, and growth in the smallest sales class will begin to pick up as the rate of loss moderates. The mid-size sales class (\$40,000-\$100,000), alone, is expected to decline at an increasing rate.

Financial management and credit availability

Projections for moderately rising debt levels and relatively favorable interest rates throughout the baseline period suggest that interest expenses will have a diminishing impact on net farm income. Interest expenses accounted for over 15 percent of total farm production expenses in 1982 and 1983. Interest expenses' share of production expenses declined steadily to 7.5 percent in 1995, similar to its 1970 value of 7.6 percent. This ratio is expected to reach 7.2 percent in 1996, and to fall further to 6.9 percent in 2000 and 6.4 percent in 2005. Credit availability and loan terms, and farmers' ability to service debt will continue to be monitored closely.

Just as the structure of agricultural production is undergoing significant changes, so too is the structure of agricultural lending. Technological innovations, legislative and regulatory reforms, demographic changes in agriculture, and increased competitive innovations all guarantees that these changes will continue for the foreseeable future. Among the more important forces at work are changes in bank laws and regulation, technological advances in telecommunications and information processing, the rechartering of Farmer Mac, and regulatory reform for the Farm Credit System. Competitive innovations include point of sale financing by nontraditional lenders, increased use of computerized credit scoring models, and joint FCS/credit union charters tentatively approved in Wisconsin.

Improved telecommunications and information processing technologies coupled with legal and regulatory changes have the potential to increase competition in many farming areas. Similarly, continuing market innovation such as greater use of customized financial contracts or demographic changes such as increased education and fewer but larger farms should lower the costs of information and credit delivery. These factors serve both to reduce the ability of local lenders to segment markets geographically, by loan size, or by loan collateral, and to enhance their ability to individualize loan terms to perceived borrower risks. Such changes could also allow some rural-based lenders to attain economies of scale previously available only in larger localities. Below are just three examples of how agricultural lending markets are changing.

The Farm Credit Administration, which regulates the Farm Credit System, has established regulatory reform as a major priority for the near future. The goals of regulatory reform are to reduce the burden imposed by regulation. Bank regulators have undertaken similar initiatives to help the competitive position of commercial banks. Major FCA regulatory initiatives so far have included reforming regulations concerning financially related services, capital adequacy, and eligibility and scope of financing with other important regulations scheduled to be reviewed over the next few years. By far, FCA's most ambitious and controversial regulatory initiative to date involves rewriting regulations on borrower eligibility and the scope of allowed FCS financing. These regulations have not been reviewed since 1972 other than to comply with legislative changes. By removing many regulatory restrictions not explicitly found in legislative language, the effect of the proposed rules is to expand the universe of eligible borrowers and types of loans some borrowers may obtain from FCS institutions.

The availability of leasing and trade credit from nontraditional lenders, such as manufacturers and dealers, is changing the structure of farm nonreal estate credit markets. For the commercial-sized farms, nontraditional lenders represent the second largest sources of debt. Leasing of machinery and equipment is particularly prevalent, and 20 percent of commercial-sized crop farms report controlling capital assets through leases. The combination of leasing and trade credit is enabling nontraditional lenders to capture market shares, especially for debts under \$50,000 where nontraditional lenders have a cost advantage. To compete, traditional lenders are seeking ways to provide direct point of sale financing with cooperating businesses.

FCS associations in Wisconsin have received preliminary approval for a credit union charter from the State Commissioner of Credit Unions contingent on approval of deposit-type insurance from the National Credit Union Association. With final approval "Countryside Credit Union," FCS association borrowers and employees will be able to receive deposit, checking, and consumer loan services that FCS associations cannot offer directly. Personnel, buildings, and equipment may be jointly employed by the credit union and the FCS associations, creating full service financial institutions with the advantages of both an FCS and a credit union charter. This move has the potential to substantially improve FCS ability to compete for loans to part-time and other small farmers.

WILL THE FARM POLICY REVOLUTION SWAMP FARM LENDERS?

James C. Webster
Editor, The Webster Agricultural Letter

Whenever you see the title of a speech presented as a question, you have a pretty good clue that the speaker does not know the answer. However, my proposition today is not quite that clear-cut. The answer to my question can be relatively easy -- if you want the short answer. The short answer is no -- the changes in farm policy that are likely to emerge from Washington will not overwhelm agricultural lenders, at least not those who are curious enough to anticipate those changes and nimble enough to adapt. I submit that those farm lenders who made it through the 1980s and prospered in the 1990s have learned how to adapt.

However, there is also a longer and perhaps more thorough answer -- it depends. It depends on how we define the "farm policy revolution." It depends on whether and to what extent Washington remains involved in agricultural policy into the next century. It depends on whether we heed the rhetoric of the revolution or look carefully at the substance of the circumstances.

I won't claim the forecasting talents to predict the outcome of an extremely unsettled legislative and policy situation. I might be tempted to leave that responsibility to the other two panelists, both of whom are economists. But I wonder whether it would be wise to rely on economists -- with their track record in forecasting something they know about -- to forecast a political process that has many more variables than any model can simulate.

In examining the likely outcome and potential effect of any change, one must begin with the truism that has been stated so often that it has almost become a hoary old cliché -- that the only thing permanent is change. Most of us find it easier to understand change in the context of our own experiences. I like to think of the pace of change in terms of the 15 years since I left USDA and began a newsletter business. In early 1981, USDA had a handful of dedicated word processors and a few big main frame computers. But IBM had not introduced the PC and windows were those clear panes of glass through which Bill Gates looked while he dreamed of Microsoft. The world wide web might have described the Soviet conspiracy. We had not heard of AIDS.

We should keep that kind of volatility and unpredictability in mind as try to see the future of agricultural policy and the role of government. I hope to apply that lesson in discussing five national policy themes that bear on how lenders do business with their agricultural customers and their communities. These five themes are domestic agricultural programs, including the "Freedom to Farm" scheme now before Congress; how trade policy affects agriculture; the role of

government regulation in the economy, especially in agriculture and finance; how the public sees the federal budget and federal taxation; and the influence of non-farm interests, including rural residents and the environmental movement, on the development of national agricultural policy.

First, domestic commodity policy does face major reform, even if there is disagreement over its final shape. As a general thesis, I think it is accurate to conclude that lenders can expect less certainty about federal price and income guarantees for many of their borrowers than they once had. At the same time, the added flexibility in farm programs should provide your borrowers better opportunities to profit by turning to those commodities that promise the greatest returns. Perhaps that will require lenders to become slightly more sophisticated about their customers' marketing skills, but we're talking here only about a matter of degree -- increasingly, the most successful agricultural lenders already have adapted to the brave new marketplace.

It is fashionable today to forecast the end of farm programs. We are told that public opinion will not much longer tolerate these large income transfers to a few hundred thousand grain and cotton producers who have net worth far exceeding the national average. There may be some truth to that, but if that were the controlling argument, we would not be looking at a proposal that would guarantee cash payments even if wheat reaches \$6 and corn \$4 a bushel. We are told that "transitional" is the operative word in the bills now in Congress and that farm programs will be history by the year 2002. That too may be; I am not willing to predict because many factors will have changed between now and then. But I will venture one prediction. If farm programs indeed have been repealed by 2002, then Congress by 2006 will seriously consider, and probably pass, legislation to re-enact some sort of commodity programs, but perhaps of a different sort than we have employed in the past. I am confident of that for several reasons. For one, the public will demand protection against the extreme swings of an inherently unstable market. For another, unless the Constitution is amended to take away two U.S. senators for every state, producer interests will have the political influence to maintain a minimal safety net against a price disaster.

Second, trade policy and exports will play an increasingly large role in producers' and their lenders' decisions. With his strong showing in Iowa and New Hampshire, Pat Buchanan has raised the prominence of international trade policy on the public agenda even as he has debased the level of dialogue about it. Even if his most lasting accomplishment will be the resurgence of the know-nothing movement from the 1850s, Buchanan's lesson will not be lost on mainstream Republicans in Congress or on the Clinton Administration. At least for now, it kills any chance of any new trade agreements, such as one to bring Chile into NAFTA. It also means that Washington will be seeking the most creative possible uses of every tool permitted under these agreements to break open closed markets and restrain what they see as unfair competition.

Farmers' and ranchers' growing dependence on export markets will make international trade policy more important to farm lenders. Last year, 23 percent of U.S. agriculture's sales were overseas, making it the most export-dependent industry in the nation. By the year 2000, the Foreign Agricultural Service tells us that 31 percent of its sales will come from exports. With explosive and steady growth coming in high-value processed products -- counting for 40 percent

of all U.S. farm exports last year -- producers must either turn to their own cooperatives to compete in the global market for processed products or become more dependent on the ingenuity of others for their markets. So far, the evidence suggests that the United States is not capitalizing on the value-added market to the extent that Europeans and others are.

Third, regulatory policy is being re-examined. Not many months ago -- in the wake of the stunning Republican takeover of the House and Senate -- we were being treated to fearless forecasts of dramatic reductions in government intervention in the economy. But, after a year, the outlook here too is quite different. Many of those who would move federal regulators out of the boardroom and into the bedroom have discovered it's not accomplished quite so easily. Even some of the most enthusiastic Republican freshmen in the House are discovering that Americans want their government to provide at least minimal protection from unsafe food, unfair imports and polluted air and water. It is no accident that they have failed to meet many of their ambitious goals of deregulation -- why Congress has not been able so far to repeal or modify the Delaney Clause, the Endangered Species Act, the Conservation Reserve Program or the Community Reinvestment Act.

Those who came to town last year proclaiming the Second American Revolution -- especially those who sought to restore the unchecked business climate of the "Gilded Age" of the late 19th Century -- have hit a stone wall. They and their allies in the business lobbies over-reached. One might even sympathize if the business interests who financed the congressional takeover were to cry deceptive packaging -- they bought and paid for a Congress that didn't deliver what it promised. But it was not "big government" Democrats who stopped them as Senate Republicans with an instinct for self-preservation and voters who respond to Buchanan's stump speech about record job layoffs and record stock prices.

Some regulatory reform will continue. Many common sense reforms in regulation have been achieved -- the almost non-controversial changes in Farmer Mac and the Farm Credit Act this month are examples. Whether these are aberrations or predictors of further deregulation will be determined by the results. In the case of Farmer Mac, producers will be looking for evidence that of cheaper fixed-rate mortgage money. In the case of FCS, borrowers will be looking for evidence that regulatory savings show up in borrowing costs, not in wider margins and increased capital.

Fourth, the budget and taxes will continue to be important issues but will not be as pervasive as they were over the past year. The public consciousness has changed even on a topic than seemed immutable just a year ago -- cutting federal spending, cutting taxes and balancing the budget. With almost breathtaking speed, the presidential campaign rhetoric has been transformed from reining in the federal behemoth to taming other people's baser instincts -- almost overnight, we've moved from "It's the economy, stupid," to "It's values, friend." Not only are we a fickle public, we are an impatient public. As the past few months in Washington proved, balancing the budget is heavy lifting over the long pull.

Fifth, non-farm interests will continue to affect agricultural policy and thus will continue to command some attention from agricultural lenders. Policy-makers will continue to heed the concerns of anti-hunger and consumer nutrition advocates as money is allocated for USDA. Attention will be paid to under-served rural areas in water and sewer and housing programs and ideas for off-farm job creation in developing policies and protecting budgets. But the non-farm interest that looms largest, clearly the one with the political influence that commands attention, is the bi-partisan environmental movement.

It is the force of environmental consciousness that, by and large, has been responsible for slowing the rush for "regulatory reform" in Congress. It is a dynamic that is poorly understood by the leaders of agriculture and farm business. Too many in positions of responsibility seem determined to dismiss "greens" as a fragment of the loony left, bent on undoing the capitalist system. Such an approach not only carries the risk of self-delusion but ignores the possibility of compromise and common ground that could serve multiple objectives. Not only did environmental concerns help pass farm legislation in 1985 and 1990, but I am convinced that they tipped the balance of power in the Senate and made it possible to break the logjam and pass a commodity program bill earlier this month. This is a movement that is broad-based, centered in the suburban precincts that now outvote both rural and urban areas.

To understand how the agricultural policy landscape has changed, one needs to look at the changes that are being painted in the broader political picture even as we meet today. This is very much a work in progress -- many of the issues that dominate this winter's primaries may be largely forgotten by the time the Republican nominee and President Clinton face off this fall. But there are some lessons about the future of agricultural policy that can be inferred from the 1996 campaign to date, from the last election and the election before that.

What all three of these campaigns tell me is that a significant number of Americans are unhappy about the work product of our political system and apprehensive about their economic future. In the 1992 election, just over three years ago, almost half of the eligible voters did not even bother to vote. Of those who did vote, 19 percent voted for a presidential candidate whose principal appeal was that he was neither a Republican nor a Democrat. Another 43 percent voted for a candidate who said he was a new Democrat and who promised an end to business as usual. Add those figures together, and nearly 62 percent of the voters were looking for something different. The 1994 election served to strengthen that conclusion and the handful of votes we've seen in the primary process so far only adds to it.

Another trend that is critical to understand is the new political alignment -- new fault lines that are, in many cases, replacing the traditional ideological differences. It's neither accurate nor important today to try to identify a liberal or conservative. It's hard to use the term liberal for Senator Paul Simon of Illinois when he leads the charge for a balanced budget amendment. It's equally hard to see what's conservative about western senators defending subsidized grazing on public lands.

Ever since the 1994 congressional turnover, my instinct has been telling me to pay more attention to the political imperative of self-preservation than to the ideological hope for the ideal. On balance, my hunch is that the Republican leaders in the 104th Congress won't let their revolution run over their re-election. They are operating in a political system in which one characteristic has not changed. It is a system that frustrates radical change and encourages gradualism and evolutionary change.

They, like their predecessors, are very good at arithmetic -- the kind that counts 50 percent of the voters, plus one. And, like most of their predecessors, many of them will find that the restaurants on K Street and the glare of television lights is more interesting than anything back home. It is no accident that the feature of the Contract with America that showed the deepest split in House Republicans was the term limitation amendment.

TRADE, THE BUDGET, AND POLICY: WHAT DO THEY MEAN FOR FARMERS AND LENDERS?

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As we approach the 21st century American farmers and ranchers face three major realities:

- Real farm income remains flat and real income for the farm sector as a whole is not expected to rise in the next decade.
- American agriculture is highly dependent on export markets. Half our wheat, one-third of our cotton and nearly one-fourth of corn currently go to foreign markets.
- Government support for farmers and federal intervention in agricultural markets are declining. The decline in direct payments is highly visible but the diminishing use of other policy instruments -- such as supply controls, price supports and government stocks -- are also important.

What do these realities mean for American farmers and ranchers? And what do they mean for financing American agriculture in the 21st century? These are the questions I would like to explore in my remarks today. But first lets take a look at the trends behind these three realities.

REAL NET FARM INCOME IS FLAT

Nominal farm income has risen by almost 30 percent during the last decade. But *real* farm income declined by 3 percent during the same period, as inflation eroded the gains in nominal income. From my perspective, this trend is likely to continue, with aggregate farm income flat or declining as we enter the 21st century.

What does this mean for individual American farmers and ranchers? Of course it does not mean that their individual incomes will be falling, but it does mean that farm businesses will remain under considerable economic pressure. In my opinion, this pressure will only further the well-documented trends toward consolidation (fewer farms) and increasing reliance on off-farm income.

AMERICAN AGRICULTURE IS HIGHLY DEPENDENT ON EXPORT MARKETS

Just to maintain current levels of real farm income, exports must grow. Current prospects for export markets appear bright. However, in addition to the usual bumps in the road, I see a major challenge and two important question marks which I believe cloud the future of agricultural exports.

First the challenge: The structure of world agricultural trade is shifting away from bulk commodities and toward value-added and higher-valued products. Although U.S. agriculture is starting to follow these trends we remain positioned as a supplier of bulk commodities. As a nation, we have a large investment in an infrastructure oriented to bulk commodity export, and our policies remain focused on bulk commodity markets.

Next the question marks, trade policy and the global balance of demand and supply.

Our current expectations about agricultural exports assume that world trade and U.S. exports will grow as a result of trade liberalization following GATT and NAFTA. Will our optimistic view of the global trading environment come to pass? Although I remain optimistic, protectionist ideas remain alive and part of our political discourse -- as this week's primary election in New Hampshire demonstrated. There are also questions about the ability of GATT and the new World Trade Organization to discipline agricultural policy. Among others, Robert Paarlberg of Wellsley College has questioned the ability of the Uruguay Round to control future export subsidies in a recent *Choices* article.

Our expectations about export markets are also being shaped by a growing perception that the world is headed toward a food shortage. These concerns, and their effect on our outlook, are increasingly reminiscent of similar concerns in the early 1970s, which did not materialize. Both historical experience and my training in economics lead me to view suggestions that we are headed for a global food shortage with a high degree of scepticism. I do not believe that American farmers should not expect that a food shortage, even should it occur, will ensure their prosperity.

DECLINING GOVERNMENT SUPPORT AND INTERVENTION

The federal budget remains perhaps the single most important driver of U.S. agricultural policy. Although spending on farm programs and the annual federal deficit have both declined in recent years, the budget's pressure on farm programs has not abated. Nor is likely to in the future. Why?

First, there is strong political pressure to balance the budget. This pressure will continue even if the deficit falls, because the fundamental debate is as much about the size and scope of the federal government as it is about the economic implications of the deficit.

Second, real fiscal pressure will build early in the 21st century unless the large entitlement programs, Medicare and Social Security are brought under control. The political reality is that no matter how few dollars they represent, farm programs will not be exempt from cuts in an environment where the large entitlement programs are being scaled back.

As a result of budget pressure and changes in the structure of the agricultural markets, government intervention and support for agriculture have been steadily declining for over a decade. Consider the following evidence:

- We have largely given up on supply controls as a policy instrument. No matter what the final farm bill looks like, the Acreage Reduction Program is almost certain to be eliminated.
- The policy of tying loan rates to market prices is now firmly established, and price supports play little role in agricultural markets today. However, nonrecourse loans do continue to provide participating farmers with important financial tools for managing liquidity and risk.
- Government stocks no longer play an important role in agricultural markets. Elimination of the Farmer Owned Reserve program is a real possibility.
- Direct payments to farmers are declining.

Although all aspects of declining government intervention in agriculture are important to farmers, I would like to focus attention on the last two points: stocks and payments.

Today, U.S. grain stocks are at very low levels. For example, both total wheat stocks and the stocks-to-use ratio are at their lowest level since the early 1970s. Even more important than the *recent* decline in stock levels is the prospect that fundamental changes in agricultural policy will lead to permanently lower levels of stocks. As events of the past year illustrate, these low levels of stocks increase price volatility. Lower stocks coupled with dependence on export markets mean that farmers will face more volatile prices and even greater challenges managing market risk in the future.

With price volatility and market risk likely to increase, the decline of direct government payments will have various side effects. Depending on the outcome of the farm bill, the negative correlation between payments and prices is also likely to weaken. Lower levels of payments will mean that farm income is more dependent on the market. Moreover, as the value of farmers' contracts with the government declines, so will program participation. Lower participation in government programs, which provide important financial services (like risk and liquidity management tools) will mean that farmers will increasingly look to private sector providers of financial services for these tools.

WHAT DO THE REALITIES MEAN

Flat farm income, dependence on export markets, and declining government intervention and support mean that farmers will face *continuing economic pressure* and *increased exposure to market risk*. Trends toward the *consolidation* of farms, *integration* (both horizontal and vertical) and the "*industrialization*" of farming will continue. The declining role of government

will increasingly force farmers to *look to the private sector for financial services* once provided by the public sector.

In this environment farmers and ranchers will need access to increasingly sophisticated financial services. Financing the farm isn't just credit any more! In addition to the need for more sophisticated risk and liquidity management services, the changing structure of the farm sector will require new sources of equity capital. Agricultural production today cannot be adequately financed through the traditional vehicles of family wealth, retained earnings and debt.

Agricultural producers and financial service providers will need to find new ways to meet these in order to provide the capital and financial services which American farmers and ranchers will need to prosper in the 21st century. The evolution toward a new environment for financing agriculture is already underway. Large integrators are bringing new sources of capital and financing to the hog industry. The recent alliance between John Deere and Pioneer Hi-Bred to provide farm financing, AgriGreen, is another example of an innovation in agricultural finance. The creativity of commercial banks, Farm Credit, and other financial institutions in providing start-up capital for new value-added enterprises, like the Dakota Pasta Growers is yet another example.

As the structure and economics of agriculture continue to evolve, agricultural finance must evolve with it.

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World Meat Trade - A U.S. Perspective
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Livestock and poultry producers increasingly operate in a competitive environment favoring "low-cost" firms that typically are larger, more efficient, and able to spread fixed costs over higher production volume.

Record meat supplies over the past several years have increased competitive pressures in the red meat sector and reduced operating margins. Industry consolidation within the poultry and pork sectors has been dramatic and with this change, increased public awareness and concern.

However, U.S. consumers have benefited from large meat supplies at lower prices. Record meat consumption has occurred during most years of the 1990's while expenditures for meat continue to decline as a percent of disposable income. Food expenditures in 1996 likely will fall below 10 percent of disposable income, with meat proteins accounting for about 2 percent. This is one reason why U.S. meat consumption is higher than any other region of the world.

Consumers in most other developed countries spend nearly twice as much of their disposable income on food items. The links between per capita income and meat consumption are strong. Income growth, typically a prerequisite for higher consumption, is expected to rise as world trade barriers are reduced and trade increases.

Tight world grain supplies this winter and sharply lower feed grain stocks available for livestock and poultry rations could impact meat supplies in 1997 if harvested crops this year do not replenish inventories. Projected 1995/96 ending U.S. feed grain stocks will fall nearly 70 percent from a year earlier, and 56 percent below 1993/94. Global 1995/96 coarse grain supplies also are down sharply from the past two years, and are fueling strong U.S. grain exports in spite of higher prices.

So far, higher prices have not slowed either international demand for feed grains or forced liquidation of breeding inventories in most countries. In the U.S., feed requirements continue to increase due to expanding inventories. Hog breeding inventories on December 1 were up 1 percent from a year earlier with December 1995-May 1996 farrowing intentions suggesting expanding year-over-year production increases this spring through second-half 1996. Poultry sector expansion remains strong, with broiler production expected to rise 6 percent this year and turkey

production, although slowing, up 3 percent. Total cattle on feed on January 1 were up 3 percent from a year earlier.

With larger meat supplies expected in 1996, U.S. meat processors are looking to expanding international markets to offset expected declines in U.S. prices and profits. Several countries have rapidly increased their meat imports in recent years and have become important customers to both U.S. and foreign firms. Unfortunately, the list of potential customers is somewhat limited and competition between exporting countries and meat groups within each country for export dollars are expected to intensify.

Major Importers

Japan

Japan is the world's largest meat importer. It also is one of the U.S.'s most important clients, taking about 55 percent of our beef exports, 48 percent of our pork exports, and 7 percent of our broiler exports in 1995. U.S. red meat exports, in particular, have grown rapidly in recent years. But these rates are not deemed sustainable even as Japan becomes more dependent on external suppliers.

Japanese beef imports currently represent about 60 percent of domestic consumption, up from 50 percent in 1990. During this same period, per capita consumption rose from 19 pounds to 26.5 pounds. U.S. suppliers benefited both from rising consumption and expanding imports. Growth rates in the future may be sharply lower, however. By 2005, imported beef will account for closer to 70 percent of domestic supplies, but per capita consumption is forecast to rise only 3-4 pounds from current levels.

Japanese consumers eat nearly 40 percent more pork than beef, but are less reliant on external suppliers to meet domestic requirements. There also are more countries vying for market penetration. U.S. market share in the Japanese pork market is about 20 percent compared to 45 percent for beef.

Japanese pork imports accounted for about 38 percent of consumption last year, compared to 24 percent in 1990. Over the next decade, imports are expected to increase to nearly 50 percent of domestic supplies, but total demand increases may be limited to population growth. Per capita supplies are forecast to reach 39 pounds in 2005 versus 37.5 pounds in 1995.

U.S. meat exports are projected to continue expanding, but rates of growth will decline sharply in future years. Expansion will rely more on buying market share from export competitors rather than relying on trade initiatives or rising per capita consumption to drive volume increases. Prospects for the pork sector appear more favorable in this regard. Pork exports from Taiwan are expected to drop off due to increasing public

pressure to limit production due to environmental concerns.

U.S. beef processors likely will continue to hold a comparative advantage in grain fed beef exports, but these meat cuts are expensive and will require rising incomes to support continued growth. Competition from Australian, New Zealand, and emerging South American grass-fed beef cuts is expected to remain stiff.

Russia/FSU

Russia and the FSU currently are the second largest meat importing region. This situation remains volatile, however, and trade patterns will remain volatile. Red meat imports from the U.S. were up sharply in 1995, primarily lower valued trimmings material used in the manufacturing sector. These products were competitively priced with broiler leg quarters due to large U.S. supplies at sharply lower prices. Future growth will depend on continued availability of low priced products that are deemed surplus in the U.S. market.

Longer term prospects for growth also do not appear favorable. This region still has the potential to become food self sufficient and a potential export competitor if the regional economy is restructured.

Other Importing Countries

After Japan and Russia/FSU, the number of other major importing countries begins to drop off quickly. Most market growth will continue in Pacific Rim countries like Korea, Hong Kong and China, but rates of growth will be modest. The U.S. comparative advantage will continue for broiler exports, but pork sales will be modest and will have to compete with regional suppliers. China currently is expanding hog breeding herds to increase supplies for domestic consumption and for export. U.S. pork sales to Korea could be at risk in the future if Chinese production exceeds domestic needs and surpluses are exported to nearby countries.

Domestic Outlook

Pork Sector

Industry consolidation in the pork sector has increased in recent years due to large total meat supplies, rising costs, and lower profits. Production by smaller producers that exit the business is being offset by larger operators.

Hog production began expanding rapidly in the early 1990's following several years of steady profits in the late 1980's. Venture capital flowed into the sector to greatly

expand production in several states and for capital improvements on existing facilities. These newer operations adopted the latest technological advances in animal nutrition, used improved genetics in their breeding herds, and were able to control environmental conditions and reduce exposure to disease, thus improving rates of gain and pounds of pork marketed per breeding animal.

As pork supplies have increased and market prices declined, producer margins have eroded. Profits have narrowed for all producers, but particularly smaller producers that typically have higher average costs. The industry is becoming more sharply divided between small less capitalized operations and the newer "corporate farms". Political pressure has intensified in several states to limit the expansion of the large commercial operations. Arguments against the larger operations include both unfair competition and environmental concerns from effluent that may lead to ground and surface water contamination and increased odor.

The number of U.S. hog operations in 1995 dropped to 182,700, 12 percent below the previous year. A similar decline is likely in 1996. This contrasts with continued growth of the largest operations which expanded their share of the U.S. inventory to 43 percent in 1995 versus 37 percent a year earlier. These operations represent less than 3 percent of the total hog farms, and nearly one fourth of these operations are located in North Carolina.

Future growth within the sector will be limited to producers who can manage under a lower cost structure. Total production increases through 2005 will be very limited, as per capita pork supplies are projected to remain nearly unchanged at 50 pounds.

Beef Cattle Sector

The beef cattle sector includes several distinct subgroups that historically have operated in a competitive and sometimes adversarial capacity. The three groups are cow/calf, stocker, and feedlot. Profits at each level are derived from processor demand which is driven by retail sales volume and prices.

Structural changes within the cattle sector have occurred primarily beyond the initial stage of production. Fewer and larger cattle feeders market an increasing proportion of the fed beef supply. Many of these large feedlots are owned by international grain merchandising companies that also own meat processing companies. However, unlike segments of the pork sector where vertical integration between growers and processors is prevalent, most business arrangements within the cattle sector are limited to vertical coordination of supplies.

Even when under the same parent company, feedlots and processors maintain distinctly separate managements. Each entity is viewed as a profit center with

contractual arrangements limited to pre-arranged delivery schedules for cattle going to a particular plant and at a specified price based on market averages for the delivery period.

For most cow/calf and stocker operators, the size of the operation is limited to the available land base. Increasing the carrying capacity per acre would require large capital infusions which are difficult to justify given the historically low return on investment. Expanding forage acreage would have to pulled from the crop sector which may be difficult over the next few years. Most beef cow herds remain small with less than 50 head. Thus, off farm income or revenue from other farm enterprises is necessary to support a family.

Poultry Sector

Growth in broiler and turkey production over the next decade will account for nearly all of the increase in per capita meat supplies. Per capita poultry consumption is projected to equal red meat consumption by 2005. This requires only a modest annual growth rate of 2-3 percent, but the cumulative change exceeds 25 percent by the end of the period. At that time, U.S. processors are forecast to take 36 cents of every consumer dollar spent on meat versus 29 cents in 1995. Most of that increase will come at the expense of the beef sector.

Marketing Trends

The farm-retail price spread for beef and for pork has increased sharply during the past decade. However, rather than being an indication that those firms in the marketing channel have fattened their profits, it is an indication of the rising cost of doing business and of the increased desire of consumers to have more value and conveniences included with the meat products they purchase. With rising labor, energy, and other costs, charges for marketing meat can be expected to rise further.

Passing higher marketing costs on to consumers is becoming more difficult, however, particularly in the current environment of record large total meat supplies and increasing competition between the meats for the consumer dollar. Consumers have shown an increased willingness to substitute cheaper cuts of meat or cuts from other animal species if prices get out of line, and retailers have had to adjust their merchandising strategies accordingly. Thus, higher prices sought by producers or paid by processors may not be accepted readily by retailers. At the same time, higher processing or marketing costs are being passed back down the marketing chain as lower prices at the producer level.

Producers and processors have absorbed higher costs by decreasing operating

margins and increasing volume to maintain a constant revenue stream. This strategy has resulted in higher concentration ratios in meat slaughter/processing and the rise of "corporate farms" that currently are being criticized by smaller producers who cannot compete under the lower cost structure.

The price at which the retailer can sell the meat and the cost of marketing the meat determine the price that can be paid for live animals. Thus, the producer price becomes a residual. But this residual price must be high enough to give the producer a profit or he reduces his output in the long run.

Current Situation

Grain price increases resulting from the reduced 1995 feed grain harvest have impacted the various livestock sectors differently. For cattle, much of the increase in feed costs has been offset by reducing bids for feeder cattle. This has resulted in sharply lower returns to both cow/calf and stocker operations. And with large supplies of feeder cattle remaining on grass, further grain price increases likely would force feeder cattle prices lower.

The situation in the hog sector is mixed. Low cost operations have seen profits decline, but have not yet reported significant losses. Higher cost producers have not been able to absorb higher feed costs and likely will begin reducing breeding herds this spring.

In the poultry sector, higher grain prices have decreased profit margins for broilers, but returns remain well above a year earlier due to higher wholesale prices. Returns are expected to decline into spring but remain positive if further grain price increases remain modest.

Turkey producers already are reporting losses due to higher feed costs, but profits last fall were the highest since 1986, and will partially offset projected losses over the next 6 months. Egg producers continue to report sharply higher profits in spite of higher feed costs. Lower production over the past few months has supported recent price advances. However, larger production is forecast by later this spring and prices are expected to trend below breakeven costs.

Prospective Developments

Livestock and poultry producers have expanded meat output in spite of rising ration costs. For pork and poultry, some of this response likely is due to structural shifts within the respective industries. Larger producers that enjoy a lower cost structure can absorb the higher grain prices without cutting back production. These operations may also have access to additional capital to carry them through a perceived unprofitable short run situation.

However, If crop prospects are not favorable this summer, liquidation of breeding animals will increase, leading to additional meat supplies and even lower prices in the short run and lower production next year. Retail meat prices are not expected to reflect higher grain prices in 1996 due to large available supplies and competitive pressure between the meats. Retail prices for beef, pork, broilers, and turkeys are expected to trend lower.

If grain prices remain high through the summer, pork producers likely would be the first to begin reducing breeding herds. Breakeven costs will approach the mid-\$40's per cwt later this spring, and hold at that level till post harvest. Hog prices are not expected to exceed this level due to rising second half production.

Higher grain prices, if they persist, are expected to moderate current expansion plans within the broiler industry, which may not show up until 1997. Sharply higher profits in 1995 are fueling the current production increases, but these could be toned down if crop developments this spring turn less favorable. Production currently is forecast up 6 percent in 1996, following a 5 percent increase last year.

Beef production is forecast to rise 2-3 percent this year, due in part to higher beef cow slaughter. Lower calf prices last fall and in 1996 will fuel increased culling from beef cow herds, but higher grain prices likely only speeded up a situation that would have occurred in 1997-1998. So far, negative returns have been limited to cow/calf and stocker operations.

Cattle on feed at the beginning of the year were up 3 percent from a year ago, following a 4 percent increase in net feedlots placements last fall. Favorable returns during the summer, and fall and larger feeder cattle supplies at lower prices, helped keep feedlot pens full. Feedlot placements and fed cattle marketings are expected to remain higher throughout 1996 in spite of potentially higher grain prices. However, this assumes that additional grain price increases will be offset by further declines in stocker cattle prices.

Higher grain prices have not resulted in declining slaughter weights for either cattle or hogs. Feedlot cattle marketed in January approached record weights, and slaughter hogs are averaging 3 pounds heavier than last year.

Major Risks in the Outlook

Several factors and issues could alter the outlook presented in this paper with both short term and long run implications. Among these issues are:

Adverse weather this winter could affect livestock production and disrupt near term supplies. A series of winter storms in the High Plains during early 1993

reduced cattle weights, lowered rates of gain, and increased death losses. Beef supplies were reduced for 2 quarters, resulting in higher live animal, wholesale, and retail prices. Higher retail beef prices created an opportunity for both pork and poultry processors to increase their prices. The storm disruptions took over 6 months to alleviate.

Tight grain stocks may not have been fully factored into industry analysts expectations. The supply and utilization tables for feed grains suggests sharply lower feed grain stocks available for livestock and poultry rations while animal requirements have increased due to expanding inventories. There remains a broad assumption that grain supplies will be available although at possibly higher prices. Current grain prices still do not reflect the level of rationing that may be required to limit total use to available stocks.

A below average grain harvest this year would hold grain prices at current levels or higher and result in significant liquidation of breeding herds. Meat supplies would increase, and livestock prices would decline below current expectations. Meat supplies in 1997 would remain large, but begin declining below projections expressed in the USDA baseline scenario beginning in 1998.

EMERGING MARKETS FOR RED MEATS

Rick Carlson
Director of International Sales, Farmland Foods

Mr. Carlson's illustrations are presented on the following pages.

Jan-Oct '95 Exports

760,976 M/T Beef up 17 %

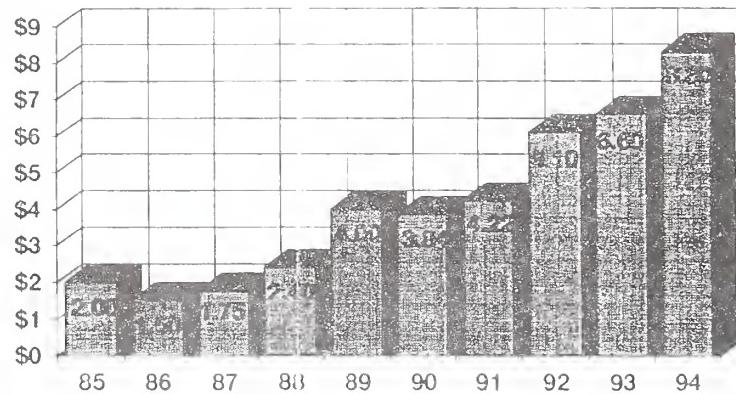
310,094 M/T Pork up 39 %

**1996 Beef Exports Will
Increase 15-18 %**

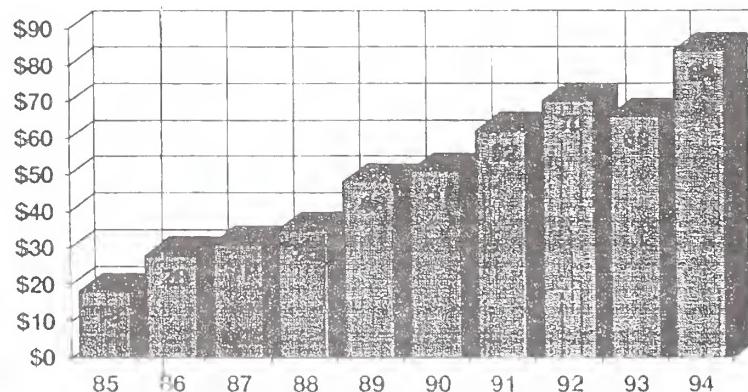
**Foreign Markets Will Absorb
50 % of Beef's 1996
Production Increase**

**Market Increase in Japan,
Korea, Russia, Hong Kong,
Taiwan in 1995 More Than
Made Up for the Over 50 %
Decline in the Mexican Market**

Export Impact on Hog Prices (\$ per head)



Export Impact on Fed Steer Prices \$ per head (1,150 lb. steer)



Major Reasons for Growth:

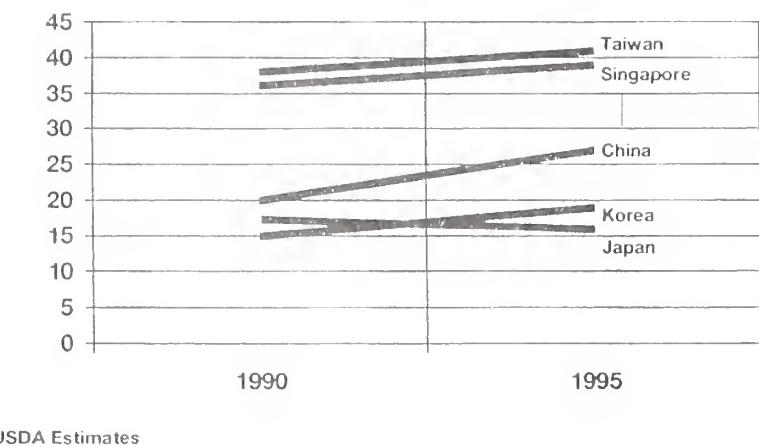
Expanding World Economics
Less Trade Barriers
U.S. Products are Consistent and High Quality
Large Volumes
Good Value

**The U.S. is the Most
Efficient Lowest Cost
Producer of Red Meat in
the World**

**Income Rises -
Diet Improves**

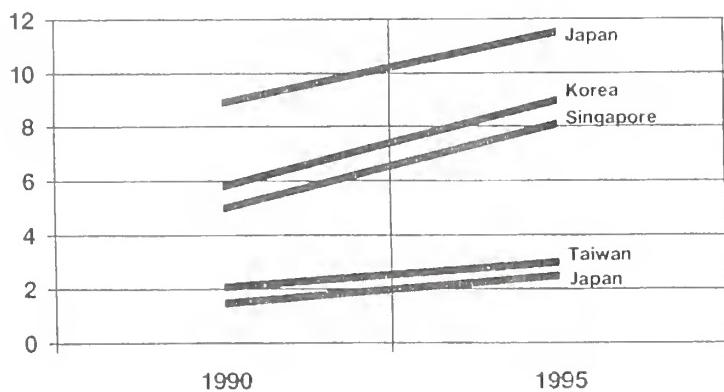
**Competition from our
Foreign Competitors will
Increase as most depend on
the Global Market Place**

Pork Consumption: Per Capita (kilograms, per annum)



USDA Estimates

Beef Consumption: Per Capita (kilograms, per annum)

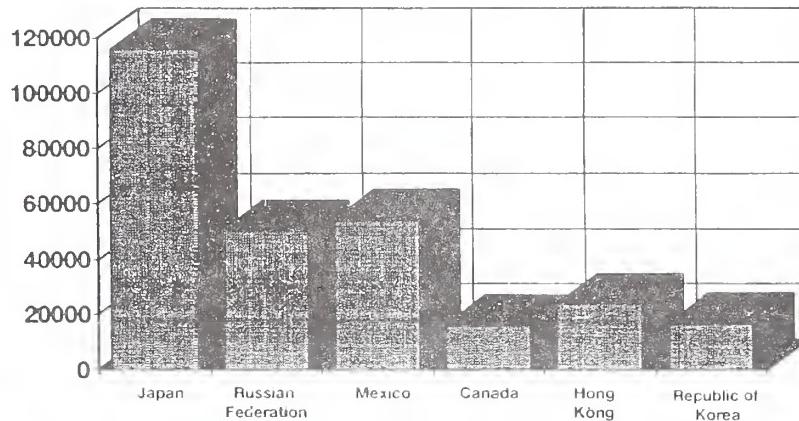


USDA Estimates

Leading Markets for U.S. Pork Plus Variety Meat Exports

January - October 1995

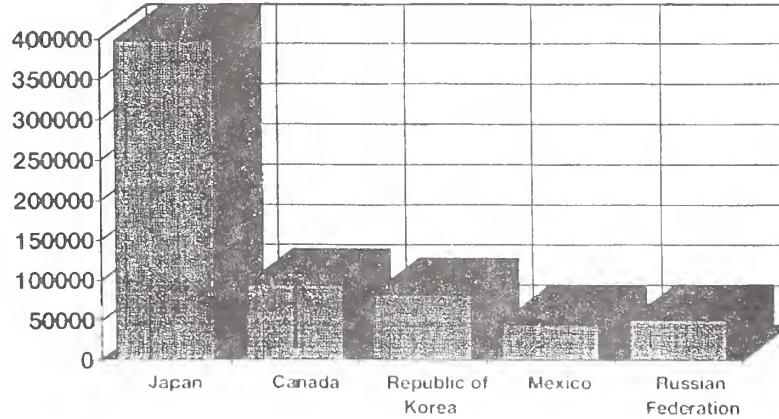
Year-To-Date Quantity (Metric Tons)



Leading Markets for U.S. Beef Plus Variety Meat Exports

January - October 1995

Year-To-Date Quantity (Metric Tons)



Asia-Pacific Self-Sufficiency: Production as a % of Consumption

	<u>1990</u>	<u>1995</u>
Pork	88 %	86 %
Beef	51 %	43 %

USDA Estimates: Excluding China.

Key Countries:

**Asia
China
Japan**

**Most Production Increase
is Taking Place
in China**

**Total Meat Consumption
in China is Growing 10 %
per year
(4,000,000 tons annually)**

China's Economy is Booming

Red Meat Output*

**U.S. 20,325,000 M/T
China 46,500,000 M/T**

* 1996 USDA Forecast.

**China has 21 % of the
World's Population
but only 7 % of the
Arable Land**

**Korea
Taiwan
Russia
North America
Mexico
Latin America
Africa
South America**

SWEETENER SESSION

February 22, 1996

Carol M. Brick-Turin

World Perspectives, Inc.

To best analyze the world of today and to speculate about the world of tomorrow, we must understand the world of yesterday. When Senator Dole earlier this month urged farm program reform on the floor of the Senate, he compared continuation of the current farm policy to driving a truck while only using the rear view mirror. Well, in order to keep that truck moving forward on the right road, avoiding as many pot holes and hills as possible, we've got to use the front window and side view mirrors as well. But only after we fully understand the road already traveled -- a road which included numerous legislative detours during this past year. And so I'll start by offering a bird's-eye review of the past year, since our last Outlook conference, to try to allow us to better understand why we are where we are today -- still awaiting the passage of the 1995 Farm Bill in February of 1996!

Before the election in November, 1994, USDA was signaling that farm programs would stay the course, that they would be simply tightened around the edges. In the aftermath of the resounding Republican victory in November, the new majority party in Congress (with 75 Republican Freshman--a majority they hadn't enjoyed in 40 years) used its newfound power to reconsider the value and construct of all federal programs. Intent on balancing the federal budget, they put price supports and, indeed, the very structure of farm program themselves, front and center in the intense effort to slash federal red ink.

In January 1995, newly appointed House Agriculture Committee Chair Pat Roberts indicated that EVERY agricultural program was on the table, including those that don't cost the taxpayers through budgeted outlays. Programs were going to have to pass the test of market orientation and reduced government involvement.

By the end of February, Senate Agriculture Committee Chair Richard Lugar caused a near revolt in the agricultural community , after implying a possible farm policy package composed of tax code benefits and deregulation as replacements for traditional farm programs; he then shifted to the more traditional approach, but slashed price support by 3%/year for five years. He speculated that the "cartel" commodities would also witness an ultimate reduction; in fact, he had two months earlier promised a bottoms up review of ALL agricultural programs, promising a farm bill fair not only to farmers but to consumers and taxpayers as well. At the same time, by the way, he confirmed his commitment to abolishing the sugar program.

But, please keep in mind, through all of this, that as a colleague of mine often reminds me, politicians are renowned for their ability to rationalize differences between their rhetoric and their actions. Also remember that reform politics and campaign politics often conflict.

By May, policy formation began in earnest; and identical bills in both the House and Senate were introduced to repeal the current sugar price support program. Congressmen Miller/Schemer and 81 members co-sponsored a bill with a broad-based, bipartisan, regionally diverse coalition in the House, and Senator Bill Bradley sponsored the bill in the Senate, with support from industrial users, environmentalists, and public interest organizations.

Meanwhile, a producer industry-wide consensus proposal was released to the House Agriculture Committee during its May hearing on the sugar program -- a consensus proposal which would later be dramatically modified.

In June the Budget Resolution set parameters for cuts in agricultural programs-- \$13.4 billion over seven years; Cuts which would ultimately set the stage for the most radical reform of agriculture programs in decades

In July, during the Agriculture Appropriations process, the House Republican leadership committed themselves to sugar program reform and promised program opponents a shot at an "up/down" vote if REAL reform were not accomplished in the Agriculture Committees (and do keep in mind that like beauty, the definition of reform is in the eyes of the beholder)

August and September witnessed the emergence of new policy platforms from both the cane refiners and Producers, the former proposing to cuts sugar loan rates and to offer support on a decreasing scale and the latter, to ELIMINATE marketing allotments and to OPERATE the program with recourse loans, triggering a conversion to non-recourse at certain levels of imports.

Meanwhile, House Agriculture Committee Chairman Roberts was on the brink of passing his sweeping new farm program legislation -- legislation which would implement the most dramatic reforms to program structure in over 50 years, known as Freedom to Farm. F to F would:

- eliminate most of the familiar program structures such as target prices, deficiency payments and annual set asides
- base support on fixed, declining annual payments, with full flexibility on crops planted
- cut \$12.3 billion from the agricultural budget over 7 years
- eliminate permanent legislation for farm programs (for our most recent 5-year farm bills were indeed amendments to the 1938 and '49 laws)

Congressman Roberts needed every vote he could muster for passage of his bill; But Freedom to Farm was defeated in the Agriculture Committee on September 20 by 5 votes. House leadership then by-passed the traditional committee route and added the plan to the budget reconciliation package during a Rules Committee mark-up. Four members with districts important to the sugar industry would not support Freedom to Farm without extracting similar support for a producer backed proposal; their votes were crucial and Roberts was ready to deal. Leadership, as they would in ANY critical piece of legislation in need of passage, had to weigh the importance of...Freedom to Farm contained sugar provisions, which unlike those which Congress leadership had earlier supported, such as a reduction in the loan rate, reflected the producer platform. I'll review those provisions a little later on, and one could argue the extent to which they reflect real reform, but my point here is to underline the shift in position of the leadership to accept provisions which had previously been rejected as short of meeting the criteria of necessary market orientation.

But one must keep the sugar title in perspective – when members count votes and weigh the importance of passage of an overhaul of the entire agricultural support system against radical reform of a single program, the degree of reform to which members are willing to agree can readily shift.

In September, Senator Lugar's effort towards radical reform in the Senate Agriculture Committee was similarly defeated. Although talk was tough and certain members were committed to radical reform of the sugar program, including expiration of the program in 2 years, votes were needed to pass Mr. Lugar's compromise plan and Senator Craig, in particular, carried the water for the producer sector.

In November, the Sen. and House Agriculture Cites agreed to a compromise Sugar Title, based on the Freedom to Farm language. The overall bill became part of the Budget Reconciliation -- the tax and entitlement bill which was subsequently vetoed by the President.

The Presidential veto created problems for farmers who had to make spring 1996 planting decisions -- would they have the full flexibility provided for in Freedom to Farm? Would they have deficiency payments as included in a Democratic alternative proposal? Would parity payments come into play if Congress reverted to permanent law? Would programs be extended for a year or 2? Vital program decisions had not been finalized because of the breakdown in the budget negotiations between the Democratic White House and the Republican Congress. Farm policy was being held hostage to the greater social policy and philosophical differences separating Republican from Democrat, with the entire farm sector made an unintentional victim to this ideological war and political grandstanding.

And so in February, after 33 hearings in the Senate, and roughly 30 in the House, and 12 months of activity, a free-standing farm bill was introduced in both the House and Senate Agriculture Cites.

In the Senate, the strategy was to pass a free-standing farm bill out of the Agriculture Committee , and take it to the floor of the Senate before the February recess. And, after days of intense negotiations between Democrats and Republicans, the bill did, indeed pass by a wide margin on February 7. A bill which reflected Freedom to Farm, with various modifications based on the Democrats needs.

The House is another story... An attempt to move the bill to the floor of the Houses failed, and certainly one of the reasons is of interest. House opponents of the sugar program wanted to ensure that consideration of any farm bill would afford them an opportunity to offer an amendment to repeal the program. Chairman Roberts felt that if he agreed to an "open rule"; that is, consideration of the bill under conditions which would allow amendments, would slow down the process -- that the House would not pass the bill. Also, some would argue that because the chances of an up/down vote to repeal the program, would succeed, opponents simply would not be given their chance.

And so, that brings us to this week, when there will again be an attempt to bring the bill to the House floor for a vote. Then, of course, the differences in the two versions -- the Senate plan and the House plan -- must be reconciled in a House-Senate conference. So...the fat lady hasn't sung and we cannot yet write the last chapter this story. But we can speculate, we can hypothesize, we can analyze..the outcome and its impact on the sweetener industry.

Let me now highlight the sugar provisions contained in the Freedom to Farm package:

- No cost provision remains
- The price support level of 18-cent loan rate for raw cane frozen BUT there would be a 1-cent penalty for forfeiting (9 mo-loan term same)
- Loans are switched to a recourse program - triggered only to non-recourse when imports hit 1.5 mln st
- Marketing assessments of 1.1 pct of the loan rate (introduced in Budget Reconciliation Act in 1991 and increase in 1993) increased 25%
- Allotments are eliminated

Why is the outcome of the farm bill debate so important to today's discussion? Because although some argue that the above proposal represents radical reform, while others argue they constitute cosmetic changes at best, all must agree that whatever plan is enacted, the outcome is indeed important to today's discussion of the outlook for sugar. For the United States sugar and sweetener industry is the

largest in the world. The market is one in which the availability of ample supplies of high quality product, delivered on a timely basis surpasses any other. And yet, it is a market significantly affected by government intervention, intervention which many argue creates distortions in the marketplace.

And, as Peter Buzanell pointed out this time last year, "U.S. sugar is not only an important part of the U.S. agricultural sector, but it also is a pivotal segment to the global sugar economy in terms of production, consumption and trade."

And so we are indeed fortunate to have with us today three people who are imminently qualified to discuss the U.S. and world outlook for sweeteners. They are able to both bridge the relationship between the two, and to discuss how government policy does, in the real world outside of Washington, effect the marketplace, both on a domestic and international arenas.

First Dan will discuss the supply/demand situation and outlook for sugar in the US and world, as well as the HFCS market in the US.

Pat will then build on this theme, focusing on the world situation for sugar, including how world and internal markets are inter-related. His analysis will of course reflect the traders viewpoint, distinct from that of either a government official, or from our third speaker, Craig. Craig is a beet grower in.....

Farm Bill 2 - To extend non-budgetary provisions of farm programs -- trade, research, agricultural credit, rural development

U.S. and World Sugar and HFCS Outlook

Daniel Colacicco and Peter Buzzanell
Farm Service Agency and Economic Research Service

The United States is expected to remain a significant producer of both sugar and high fructose corn syrup (HFCS). Only India and Brazil are expected to produce more sugar than the United States in fiscal year (FY) 1996 and the United States produces about 75 percent of the world production of high fructose corn syrup (HFCS). U.S. sugar production is expected to fall to 7.5 million short tons, raw value (STRV) in FY 1996, down 5.1 percent from FY 1995's record 7.9 million (STRV). The United States produced about 7.8 million short tons, dry basis, of HFCS in 1995. U.S. production of HFCS is expected to increase to 8.2 million tons in fiscal year FY 1996, an 6.7 percent from FY 1995.

Americans are expected to continue to consume the most sweeteners in the world. U.S. sugar consumption is expected to increase by 1 percent this fiscal year to 9.4 million STRV compared to FY 1995. U.S. consumption of HFCS is expected to increase by 3.9 percent to 8.0 million STRV next year. The combined per capita consumption of these sweeteners, 124 pounds per person (65 pounds per capita from sugar and 59 pounds per capita from HFCS), far exceeds the world average of about 44 pounds.

World sugar production for 1995/96 is estimated to 117.9 million metric tons, raw value (MTRV), slightly higher than the 1995/96 forecast of world consumption, 116.6 million MTRV. The 1.3 million MTRV surplus projected for 1995/96 plus a smaller surplus for 1994/95 permits stocks to rebuild after 2 years of sugar deficits. The higher stocks:consumption ratio for 1995/96 will prevent world sugar prices from rising.

Our procedure for forecasting the outlook for the U.S. sweetener industry in the near term is very simple -- we expect more of the same. This is due to our observation (or belief) that the sweetener industry is driven primarily by fundamental economic precepts. The domestic sweetener industry is expected to become more efficient in the future as it has in the past. Production in low-cost sugar areas will continue to increase at the expense of production in high-cost areas. Domestic use and production for sugar and corn sweeteners are expected to continue to grow. Demand for sweeteners is expected to continue to rise at a moderate rate with demand for corn sweeteners outpacing demand for sugar.

U.S. Sugar

Supply Outlook for FY 1996

Supplies of sugar are expected to increase 2.9 percent from the 11.117 million STRV in FY 1995 to 11.443 million STRV in FY 1996 (Table 1). The increase in imports of 837,000 STRV is expected to offset the decrease in domestic production of 407,000 STRV and the decrease in beginning stocks of 104,000 STRV.

The total sugar supply and use estimates for FY 1996 are developed by representatives of the

Economic Research Service, Farm Service Agency, Foreign Agricultural Service, under the chairmanship of the World Board. The committee develops the forecast based on data provided by the Farm Services Agency, National Agricultural Statistics Service, government policy announcements, and discussions with the trade.

The beet and cane sugar split of supply and exports in Table 1 was developed by the authors from data that provided the total estimate of supply and exports. Domestic deliveries are split between the beet and cane sectors under the assumption that cane refiners supply the residual that beet sugar can not supply. This assumption rests on the structure of the beet and cane refining industries and government policy. Beet processors, having control over the production of their sugar crop as well as production of refined sugar, have up to an 18-month production cycle. They can not adjust production for the current market since they lose discretion over the quantity of their output when they contract their acreage, which may be 18 months before the sugar from the crop is produced. Once the sugar is produced the high cost of storing refined sugar encourages beet processors have to market it before the next year's sugar needs the warehouse space.

U.S. cane refiners have a much shorter production cycle. They buy raw sugar from domestic or foreign sources and can process it within a few weeks, so cane refiners can adjust production to meet current market situations. Since raw sugar less costly to store than refined sugar, domestic sugarcane processors and cane refiners are not as ready to sell into weak markets as beet processors. Government policy recognizes and reinforces the residual supply characteristic of cane refining by using the import quota to fill domestic demand that domestic production cannot supply.

Domestic deliveries in Table 1 are split between beet and cane sugar by first specifying a target ending stocks for beet, then solving for beet sugar deliveries as the residual of beet sugar supply less beet ending stocks. Beet sugar stocks expected for FY 1996, 450,000 STRV, were estimated as the olympic average for the last 5 years. Cane sugar deliveries are the residual of total deliveries less beet sugar deliveries, and cane sugar stocks are the difference between cane sugar supply and cane sugar use.

Beginning Stocks: FY 1996 began with U.S. sugar stocks at 1.233 million STRV, the third lowest beginning stocks of sugar in the last decade. Cane sugar beginning stocks, estimated at 711,000 STRV, were only lower at the start of FY 1990 and were 231,000 STRV below the FY 1992 - FY 1996 olympic average (simple average but dropping highest and lowest values) of 942,000 STRV.

Beet sugar beginning stocks for FY 1996, 522,000 STRV, were 72,000 STRV above the average for the 2 years out of the last five not affected by marketing allotments, 450,000 STRV. Other evidence suggests that FY 1995 sugar marketing allocations did not force beet sugar processors to carry much more stocks over from last fiscal year than they would have preferred. There was active trading, 19,000 STRV, in sugar between processors who wanted to market more than their allocation and processors who had more allocation than sugar to market. The beet sugar sector ended last fiscal year marketing 43,600 STRV less than their allotment.

While the supply management policy of the federal government, dictated by the risk of forfeiture of price support loan collateral, caused some problems for beet processors, these were small compared to the stock management problems of the cane refiners. Cane refiners experienced plant closings, special sugar delivery arrangements, and lost sales because of the extremely tight stock situation caused by the confluence of government supply policy, bad shipping weather, and extra export demand for refined sugar made from domestic raws. Although the cane sector as a whole marketed about 37,700 STRV less than their allotment, there was 17,000 tons of raw sugar in Louisiana that would have been sold in FY 1995 had there not been marketing allotments.

Production: U.S. sugar production is expected to be down 5.1 percent in FY 1996 to 7.520 million STRV from the record production of 7.927 million in FY 1995. The FY 1996 sugar production estimate is based on processor reports to the Farm Service Agency, National Agricultural Statistics Service estimates of acres harvested, yields, and sugar crop production, and comparison of the percentage of forecast production currently completed relative to percentage completed at the same time in past years.

Beet sugar production is expected to be down by 443,000 STRV from a record 4.493 million STRV in FY 1995 to 4.050 million STRV in FY 1996. U.S. sugar beet harvested acreage is down 2 percent from 1.44 million acres in FY 1995 to 1.42 million acres expected to be harvested in FY 1996 (Table 2). Sugar beet yields are expected to fall by 11.3 percent from the FY 1995 average of 22.2 short tons per acre to 19.7 short tons per acre for FY 1996 due to poor weather. Sugar recovery rates are expected to be below trend for the second year in a row. Beet sugar recovery rates, which normally trend upward, were considerably below trend last year because of the loss of sugar in beet storage piles due to the extended slicing period. The expected sugar recovery rate for FY 1996 is still below trend because of poor late season growing weather in the mid-west and beet damage in storage piles caused by disease. Some industry analysts expect beet sugar production for FY 1996 to be as low as 3.9 million STRV, which is 150,000 STRV less than our forecast as of February

Beet sugar supplies are tighter in the short run than would appear from fiscal year aggregate numbers. The forecast for beet sugar production has fallen 300,000 STRV from the September estimate. Much, if not most, of the expected FY 1996 beet sugar production is contracted for sale before the fall harvest. The plummet in production forecasts disrupted beet processors' marketing plans and left several with considerably less uncontracted sugar than they expected during the winter. Some beet sugar processors appear to have over contracted early on and are now pulling out of the market, trying to purchase sugar from other processors, and attempting to renegotiate contracts.

U.S. domestic raw cane production is expected to rise to 3.47 million STRV in FY 1996, an increase of 1.0 percent above the 3.434 million STRV produced in FY 1995. Acres harvested for sugar are expected to decline by 4,000 acres from FY 1995 to 903.5 thousand acres in FY 1996. Acreage lost in Hawaii (21,000 acres), Puerto Rico (2,000 acres), and Texas (1,000 acres) is almost offset by a 16,000 acre increase in Louisiana and a 4,000 acre increase in Florida. Acreage contraction and expansion are directly related to the cane states relative costs of production. Yields are expected to decline slightly from 33.0 tons of cane

per acre in FY 1995 to 32.6 tons of cane per acre in FY 1996 because of the loss of high-yield acreage in Hawaii. Yields are close to average in all cane states. Recovery rates are expected to decrease slightly from 11.91 percent in FY 1995 to 11.77 in FY 1996. The estimated average recovery rate in Louisiana for FY 1996, 11.34 percent, is below the recovery rate in FY 1995, 11.88 percent. Recovery rates in the other cane states were about average.

Imports: U.S. imports are expected to increase by 425.2 percent from 1.853 million STRV in FY 1995 to 2.690 million STRV in FY 1996. Imports under the Tariff Rate Quota (TRQ) are expected to be up 38.1 percent to 1.945 million STRV. After the TRQ was initially set at the WTO minimum, USDA announced an increase to the FY 1995 TRQ of 330,693 STRV in November 1995 and another increase of 440,924 STRV in January 1996. The import estimate is based on the expectation that virtually all sugar permitted to be imported under the TRQ will be imported, thus we expect no significant TRQ shortfall this year. USDA reallocated expected shortfalls 3 times last summer to reduce the TRQ shortfall to 28,600 STRV for the 3-year quota that ended September 30, 1995. Other analysts expect a 15,000 - 100,000 STRV shortfall for FY 1996.

Imports not under the TRQ are expected to be up 157 percent from 289,000 STRV in FY 1995 to 745,000 STRV in FY 1996. Almost all of these imports, 730,000 STRV, are expected under the re-export program. Imports under the program for FY 1996 are expected to increase because of trading by the cane refiners to take advantage of temporal differences in the world raw sugar futures markets. Last year cane refiners exported 305,000 STRV more sugar, as refined or in sugar-containing products, than they imported as raw cane sugar under the re-export program (Table 3). The excess of sugar exports over sugar imports came from FY 1995 domestic raw cane sugar supplies. The March 1995 contract for world raws last winter was considerably above the March 1996 contract, permitting cane refiners to sell domestic sugar into the world market for a loss that would be more than made up when they imported the cheaper sugar duty-free in spring 1996.

The cane refiners ended FY 1995 with a credit under the re-export program of 298,000 STRV, which consisted of the 305,000 STRV export surplus from FY 1995 less 7,000 STRV they owed the re-export program from FY 1994. Only 150,000 STRV of the cane refiner's re-export credit is expected to be closed out in FY 1996 because of the current differential in the near versus distant world futures. Some analysts expect cane refiners to import 50,000-100,000 STRV less duty-free sugar than we estimate in FY 1996.

Expected imports and domestic raw sugar production indicate that the availability of raw cane sugar should be sufficient to allow cane refiners to operate at near full capacity in FY 1996. However, higher nearby prices, compared to lower prices later in the year, may be delaying arrival of quota sugar into the United States.

U.S. Demand Outlook for FY 1996

Total use is expected to increase by 0.36 percent to 9.920 million STRV in FY 1996 from the 9.884 million STRV in FY 1995. Exports are expected to stay flat in FY 1996 but

domestic deliveries are expected to increase slightly.

Exports: Sugar exports for FY 1996 are forecast to be 500,000 STRV, which is unchanged from FY 1995. New business under the refined re-export program is expected to offset the loss of re-export sales to Canada, which were about 100,000 STRV last year, and the export of extra-allotment beet sugar, 57,000 STRV, in FY 1995. Exports for the first quarter of FY 1996 were 122,000 STRV, very close to one-fourth the expected fiscal year total.

Domestic Deliveries: Domestic deliveries are expected to increase by 0.9 percent from the 9.337 million STRV in FY 1995 to 9.420 million STRV in FY 1996. Deliveries for domestic food use are expected to increase 1.0 percent from the 9.237 million STRV in FY 1995 to 9.326 million STRV in FY 1996. The 1.0 percent growth is not significantly different from the 0.8 percent population growth rate in the United States. The year-to-year increases in deliveries has been decreasing since peaking in FY 1990 at 3.1 percent (Figure 1). Last year's increase was only 0.7 percent, but some processors sold sugar in September 1994 that would normally have been delivered later in anticipation of marketing allotments. The continued substitution of HFCS for sugar in products and weak demand for bakery and confectionery products has contributed to the reduced growth rate for sugar.

Deliveries for domestic human consumption were very strong the first quarter of this fiscal year, up 3.7 percent, or 85,000 tons, from a year ago. Deliveries were 5.8 percent higher in October 1995 than October 1994, 6.1 percent higher in November 1995 than November 1994, but were 1.3 percent lower in December 1995 than December 1994. USDA is closely monitoring deliveries to see if increases in January and February 1996 deliveries justify increasing the FY 1996 deliveries estimate. Other analysts have estimates of deliveries for human consumption 50,000-100,000 STRV greater than our current estimate.

Ending Stocks and Prices

Ending sugar stocks for FY 1996 are forecast at 1.523 thousand STRV, an increase of 290,000 STRV from FY 1995. The stocks/use ratio for FY 1996 is forecast at 15.4 percent compared to 12.5 percent for FY 1995. The average stocks/use for the period FY 1986 - FY 1995 was also 15.4 percent.

Raw cane sugar prices: The ending stocks/use ratio is generally a good predictor of raw cane price in the last quarter of the fiscal year. The stocks/use ratio is a measure of how tight supplies are relative to use. A low stocks/use ratio means tight supplies and higher prices. A high stocks/use ratio means larger supplies relative to demand and lower prices. Regressing the ending stocks:use ratio on raw cane prices (#14 contract, nearest futures, July-Sept.) for the decade of FY 1986 - FY 1995 yields the following equation:

Predicted price, actual price, and stocks/use ratio is depicted on Figure 2. The simple model fits surprisingly well. Although the model only explains 68 percent of the variation, this

appears adequate because there is not a lot of variation in the price of raw cane sugar. The standard errors indicate that both the slope and the constant are significantly different from 0.

The July - September, 1996, price for raw sugar using the above equation is 22.30 cents per pound. However, the #14 raw sugar price closed at 23.14 cents per pound for the September contract on February 9, 1996. This indicates the market may be predicting that USDA is overestimating ending stocks by about 230,000 STRV.

Refined sugar prices: The 300,000 STRV drop in the beet sugar production forecast had a disproportionate impact on price because much of the anticipated FY 1996 sugar production had been contracted for sale before the production forecast plummeted. The loss of expected production was a significant portion of the beet sugar available for sale after fall 1995. Beet sugar prices rose sharply to about 29 cents per pound, Midwest, and 30 cents per pound, West Coast. The beet sugar shortage, at least in the near term, has deprived the beet sugar sector of its customary price leadership position. Beet processors just do not have the product to sell. Cane refiners are expected to be in a position to fill the beet sugar shortage, but may not be inclined to reduce prices in the face of high raw sugar prices.

Five-year Outlook for U.S. Sugar

The economic trends in the sugar industry for the last decade are expected to extend to the next 5 years (Table 4). Based on a continuation of current policy, domestic deliveries are expected to average an increase of 1.3 percent per year, about 120,000 STRV per year, slightly lower than average for the last 5 years but reflecting the downward trend in demand growth. Beet sugar production is expected to be the biggest beneficiary of the increase in deliveries, garnering about two-thirds of the business, or 80,000 STRV per year, slightly less than in the past. Domestic beet sugar is expected to take the lion's share of new growth because sugar beet production is expected to remain more profitable than alternative crops in many producing areas. Domestic cane sugar production is expected to show an increase of about 30,000 STRV per year, or one-fourth of the new business. Imports are expected to increase slightly, about one-twelfth, or 10,000 STRV per year, to meet the increase in demand not filled from domestic sources.

Great leap of faith: We expect the cane refining industry to vertically integrate in the future. A separate cane refining industry that purchases its input based on current market prices but contracts its output months ahead will continue to be subject to the risk of high input costs and low output prices. The current structure of the U.S. cane sugar industry developed when the U.S. market was dominated by imported sugar. An acceptable margin for refining cane was more obtainable when cane refiners were the price leaders. Cane refiners are squeezed now that beet sugar usually provides price leadership in the domestic refined market.

World Sugar

World sugar production for 1995/96 is estimated to 117.9 million metric tons, raw value (MTRV), slightly higher than the forecast of world consumption, 116.6 million MTRV. The

1.3 million MTRV surplus projected for 1995/96 plus a smaller surplus for 1994/95 permits stocks to rebuild after 2 years of sugar deficits (Table 5). The higher stocks/consumption ratio for 1995/96 shall preclude an increase in world raw sugar prices. The current price (#11 contract, March contract, Feb. 14, 1996) for world raws is 12.2 cents per pound, 2.2 cents less than the average price in February 1995.

World sugar production this year is expected to be 2 percent above last year's production of 115.6 million MTRV. Cane sugar is expected to increase slightly to 81.5 million MTRV and beet sugar is expected to increase by 5 percent from 1994/95 to 36.4 million MTRV for 1995/96. Expansion of sugarcane acreage in Australia, Brazil, India, Pakistan, and Thailand is largely responsible for the nearly 25 percent increase in cane sugar production from the late 1980's to 1995/96. Beet sugar acreage has declined since the late 1980's but improvements in sugar beet yields and sugar recovery rates have offset the decline.

A major difference between the USDA forecast and other global 1995/96 forecasts is the estimate of production from India for 1995/96. Unlike other forecasts, USDA expects India's production to fall by 7 percent in 1995/96 to 15.2 million MTRV from the 1994/95 record production of 16.3 million MTRV. Lower sugarcane production is expected because: 1) a delayed 1995 monsoon season and the variable rain received by the cane growing states, 2) depressed prices, which have caused mills to delay payments to farmers thus increasing diversion of cane to gur, a non-centrifugal sugar, and 3) the lack of government incentives to produce sugar early and late in the grinding season.

Global sugar consumption is estimated to increase 1.8 percent above the 1994/95 consumption of 114.5 million MTRV. Sugar consumption is expected to increase in the lesser developed areas of Central and South America, Africa, the Middle East, and Asia. Consumption is increasing as domestic sugar prices fall, population and income increase, and more processed foods and beverages containing sugar reach consumers in these areas. Sugar consumption is expected to be unchanged from 1994/95 in the formerly communist countries of eastern Europe but considerably below consumption in the late 1980's due to economic instabilities and higher retail sugar prices.

Ending stocks for 1995/96 are forecast at 20.8 million MTRV, the highest since 1992/93. The global stock:use ratio is expected to be 17.9 percent in 1995/96, up from 17.01 last year and 16.4 two years ago. Prices could weaken further this spring due to the record 1995/96 record crop and the slight replenishment of stocks. World raw sugar prices are currently higher than most analysts had expected at this time because the world surplus is small and much of it is in India, which has limited export capacity, Cuba delayed its harvest, the United States increased its TRQ, unexpected demand in countries such as the Philippines and Indonesia, and the uncertain situation in China and Pakistan.

Corn Sweeteners Outlook

U.S. corn sweetener production and use are expected to experience strong growth in FY 1996 despite a poor corn crop and record high corn prices. The U.S. corn-wet milling

industry is expected to use over 700 million bushels of corn to produce corn sweeteners (high fructose corn syrup, crystalline fructose, glucose syrup, and dextrose) this season. This represents about 10 percent of the corn crop currently forecast at 7.37 billion bushels.

The FY 1996 (September/August) U.S. corn crop is forecast by USDA to be down 28 percent from the record high 1994/95 corn crop of 10.10 billion bushels due to reduced acres harvested and lower yields reflecting weather problems in several States. With the reduced crop and strong demand from exports and the food, seed and industrial use (FSI) sector which includes the corn wet milling industry, corn stocks (at the end of the marketing year) are forecast to drop to 457 million bushels 5.4 percent of total use forecast at 8.49 billion bushels. This contrasts sharply with 1994/95 when end of year stocks were 1.6 billion bushels, 16.6 percent of total use. The tight supply has resulted in strong corn prices. The average farm price for corn was \$2.26 per bushel in 1994/95 and is forecast by USDA at between \$3.00 and \$3.40 for FY 1996. The cash price for corn (no.2 yellow Central Illinois) averaged \$3.53 per bushel in January compared with \$2.22 per bushel in January 1995, a 59 percent increase (figure 3).

For users of corn sweeteners the high corn price has not translated into substantially higher prices for high fructose corn syrup (HFCS), despite higher demand from the beverage industry. HFCS-55 prices (wholesale list prices, Midwest market) averaged 20.45 cents a pound dry basis for the first quarter of fiscal FY 1996 (October-December), only 3.8 percent higher than a year earlier. HFCS-42 prices averaged 18.38 cents a pound versus 17.50 cent for October-December 1994. Moreover, HFCS continues to under-price refined sugar by almost 8 cents a pound as wholesale refined beet sugar price averaged 27.85 cents a pound for the first quarter of fiscal FY 1996 (figure 4).

This unusual pricing situation for HFCS can be explained largely by the substantial expansion of corn wet milling capacity over the past 18 months-- an increase of more than 25 percent according to industry analysts. The new capacity has come on line to service the upward trending demand for corn sweeteners in the United States and the potential market in Mexico.

USDA forecasts fiscal FY 1996 HFCS consumption at 8.2 million tons, dry basis, up 4.7 percent from 1994/95. The growth is expected to be underpinned by a 3-4 percent expansion of the soft drink industry in 1996 largely from nutritive products sweetened with both HFCS 55 and 42. In addition, use of HFCS-42, glucose syrup and dextrose is also expected to expand in the processed foods sector. While demand for corn sweeteners is up, competition for market share among corn wet-millers has been intense. With increased capacity, and the capacity utilization ratio dropping from over 90 percent in the early 1990's to 75 to 80 percent in 1995 and 1996, the competition for the beverage market has been intense. Market reports reveal a buyers market as individual sweetener buyers for soft drink manufacturers reported they were flooded with offers prior to contracting for the new year (large soft drink manufacturers generally contract for HFCS purchases on an annual calendar year cycle).

Part of the capacity utilization problem reflected in relatively stable HFCS prices can be

traced to the Mexican market. Mexico has the world's second largest soft drink market after the United States, and the U.S. corn wet milling industry has been positioning itself to meet potential Mexican demand, if the Mexican soft drink industry begins to substitute HFCS for sugar. Problems in the Mexican economy including the large peso devaluation in December 1994 have stalled hopes of the U.S. corn wet-milling industry to develop the Mexican market. After trending sharply upward for several years, U.S. exports to Mexico of HFCS including HFCS-42, HFCS-55 and crystalline fructose, dropped from 67,200 metric, dry basis, in fiscal 1994 (October 1, 1993-September 30, 1994) to 49,800 tons in fiscal 1995. Helping to foster this potential trade is the declining tariff on HFCS. Under NAFTA, the Mexican tariff on U.S. HFCS drops 1-1/2-percent a year from 15 percent to zero by 2004. For 1995, the tariff on HFCS was 12.0 percent ad valorem, and this year it is 10.5 percent.

Table 1. U.S. Sugar Supply and Use

	FY 1995 Total 1/	FY 1996 1,000 short tons, raw value		
		Total 1/	Beet	Cane
Supply				
Beginning stocks	1,337	1,233	522	711
Production	7,927	7,520	4,050	3,470
Imports	1,853	2,690	16	2,674
Quota	1,564	1,945	16	1,929
Duty free	289	745	0	745
Total Supply	11,117	11,443	4,588	6,855
Use				
Exports	502	500	0	500
Domestic deliveries	9,337	9,420	4,138	5,282
Domestic food use	9,237	9,326	4,134	5,192
Other	100	94	4	90
Miscellaneous	45	0	0	0
Total Use	9,884	9,920	4,138	5,782
Ending stocks	1,233	1,523	450	1,073
Stocks/Use (%)	12.5	15.4		
1/ Feb. 9, 1996 WASDE				

Table 2. Calculation of Sugar Production Forecast, FY 1996

	Area Total	Area Seed	Area Sugar	Yield 1,000 tons/ac	Crop Production 1,000 tons	Recovery percent	Sugar Production 1,000 tons, raw value
Units: -----1,000 acres-----							
Cane:							
Florida	445.0	18.0	427.0	34.0	14,518	12.19	1,770
Louisiana	400.0	32.0	368.0	25.4	9,347	11.34	1,060
Texas	42.3	1.0	41.3	33.4	1,381	10.14	140
Hawaii	47.0	3.8	43.2	86.6	3,741	12.30	460
Puerto Rico	27.0	1.0	26.0	19.0	500	8.00	40
Total	961.3	55.8	905.5	32.6	29,487	11.77	3,470
Beet:							
From Beets			1,416.4	19.7	27,954	13.47	3,765
From Molasses							285
Total							4,050
U.S. Total							7,520

Source: World Agricultural Outlook Board

Table 3. Re-export Program Data

Fiscal Year	Imports	Refined Re-exports	Product Re-exports	Total Re-exports (1,000 Short Tons)	Imports - Exports	Remaining Balance 1/
1983	137	63	0	63	74	74
1984	187	279	21	300	-112	-39
1985	480	369	13	382	98	59
1986	484	512	22	533	-49	11
1987	553	547	35	582	-28	-18
1988	426	345	43	388	38	21
1989	557	451	31	482	76	96
1990	537	564	35	599	-62	34
1991	599	706	59	765	-166	-131
1992	667	562	88	650	16	-115
1993	601	397	148	545	56	-59
1994	641	432	143	575	66	7
1995	230	445	90	535	-305	-298
1996	730	500	80	580	150	-148

1/ End-of-yr. balance. Positive number means refiners obliged to export. Negative number means refiners have right to imports for domestic sale.

Source: World Agricultural OutlookBoard

Table 4. U.S. Sugar Supply and Use Forecasts, FY 1996 - FY 2001 1/

Item	Units	1996	1997	1998	1999	2000	2001
Beets-Planted							
Harvested	1000 Acres	1,443	1,515	1,480	1,495	1,510	1,525
Yield	1000 Acres	1,416	1,440	1,455	1,470	1,485	1,500
Tons/Acre	Tons/Acre	19.7	20.3	20.3	20.3	20.3	20.3
Production	Mil. S. Tons	28.0	29.2	29.5	29.8	30.1	30.5
Cane-Harvested	1000 Acres	906	899	899	898	900	903
Yield	Tons/Acre	32.6	31.7	31.8	31.8	31.9	32.0
Production	Mil. S. Tons	29.5	28.5	28.5	28.6	28.7	28.8
Supply:							
Beginning Stocks	1000 S. Tons	1,233	1,512	1,350	1,368	1,385	1,401
Production	1000 S. Tons	7,510	7,920	8,020	8,110	8,220	8,350
Beet Sugar 2/	1000 S. Tons	4,050	4,580	4,660	4,730	4,810	4,890
Cane Sugar 3/	1000 S. Tons	3,460	3,340	3,360	3,380	3,410	3,460
Total imports	1000 S. Tons	2,689	1,918	2,128	2,168	2,176	2,178
For consumption 4/	1000 S. Tons	1,945	1,318	1,528	1,568	1,576	1,578
Other imports 5/	1000 S. Tons	744	600	600	600	600	600
Total supply	1000 S. Tons	11,432	11,350	11,498	11,645	11,781	11,929
Use:							
Domestic disappearance	1000 S. Tons	9,420	9,540	9,670	9,800	9,920	10,050
Exports	1000 S. Tons	500	460	460	460	460	460
Miscellaneous 6/	1000 S. Tons	0	0	0	0	0	0
Total use	1000 S. Tons	9,920	10,000	10,130	10,260	10,380	10,510
Ending stocks	1000 S. Tons	1,512	1,350	1,368	1,385	1,401	1,419
Available stocks	1000 S. Tons	1,512	1,350	1,368	1,385	1,401	1,419
Stocks/use ratio	Percent	15.2	13.5	13.5	13.5	13.5	13.5

1/ Fiscal year is October 1 through September 30. The 1995 crop corresponds with fiscal 1996, etc. Historic data for area planted, harvested, yield, production, and prices of sugarbeets and sugarcane are on the NASS crop year basis; all other data are on a fiscal year basis. 2/ Beet sugar yield, raw value, per ton of beets (not including sugar from molasses)

rises on trend, at 0.1 percentage points each year. Desugaring of molasses adds a net 265,000 tons in 1995, 350,000 tons in 1997, and stays at about 7 percent of beet sugar output through projection period. 3/ Raw cane sugar yield per ton of cane rises 0.06 percentage points per year as new processing technology is adopted. 4/ Quota imports, both raw and refined, at the low rate of duty and very small amounts of high-duty imports. Projected imports do not necessarily reflect the determination by the Secretary which will be made pursuant to Additional U.S. Note 3 of Chap. 17 of the HTSUS.

5/ For re-export & polyhydric alcohol. 6/ Includes CCC disposals, refining loss and miscellaneous non-food use, and a statistical adjustment.

Table 5. World Sugar Supply, Use, and Prices 1/

	1991/ 1992	1992/ 1993	1993/ 1994	1994/ 1995	1995/ 1996 3/
1,000 short tons, raw value					
Supply					
Beginning stocks	21.02	23.60	21.06	18.39	19.48
Production	116.51	112.01	109.84	115.56	117.94
Imports	30.82	29.61	30.00	30.43	31.43
Use					
Exports	30.82	29.61	30.00	30.43	31.43
Domestic consumption	113.93	114.62	112.51	114.47	116.34
Ending stocks	23.60	21.06	18.39	19.48	21.08
Stocks/Consumption (%)	20.71	18.37	16.35	17.02	18.12
World raw sugar price 2/	9.23	9.56	10.99	13.85	12.19

1/ Marketing varies by country. 2/ Contract No. 11, f.o.b. stowed Caribbean, Sept.-Aug.

average. 1995/1996 Sept.-Nov. average. 3/ Forecast includes WASDE updates
for the U.S. forecasts, February 9, 1996.

Figure 1

Annual Increase in Domestic Food Use

Percentage

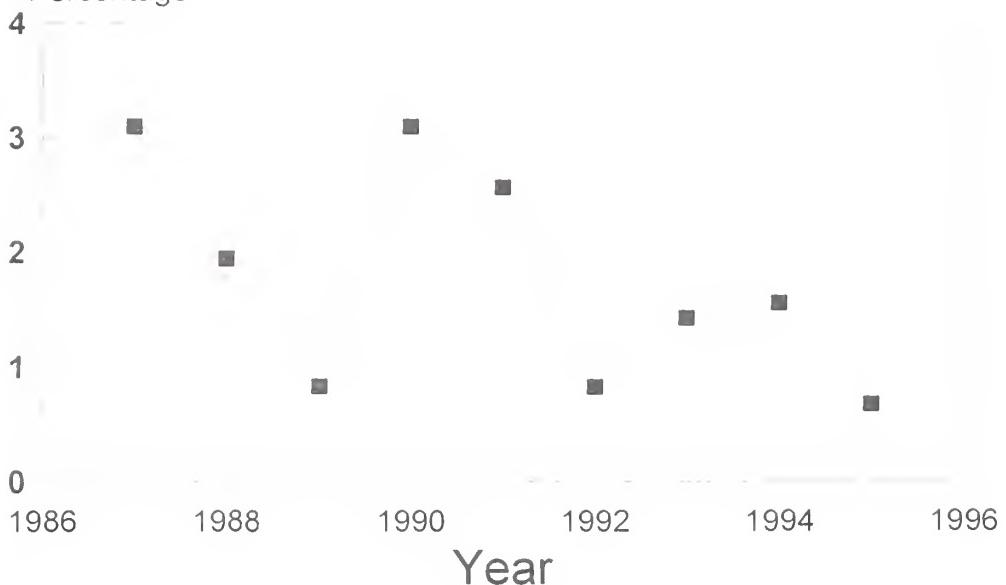


Figure 2
Actual and Predicted Raw Sugar Prices

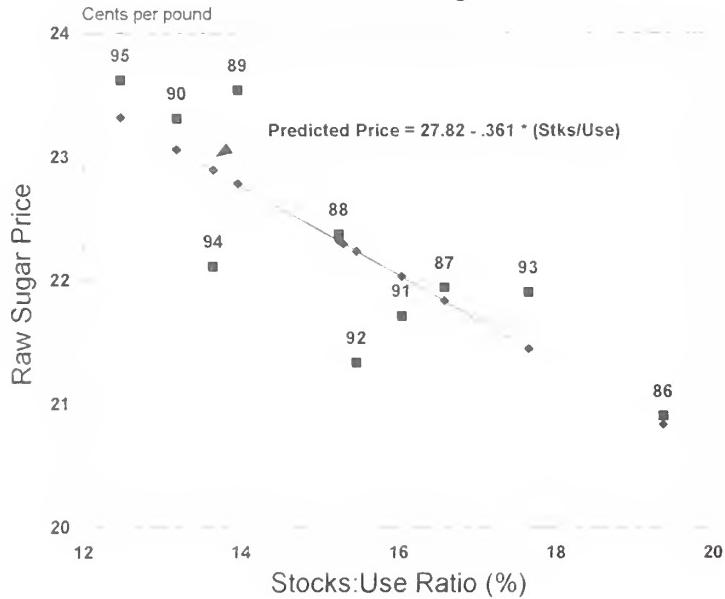


Figure 3

U.S. Corn Price, by Month

Dollars per bushel

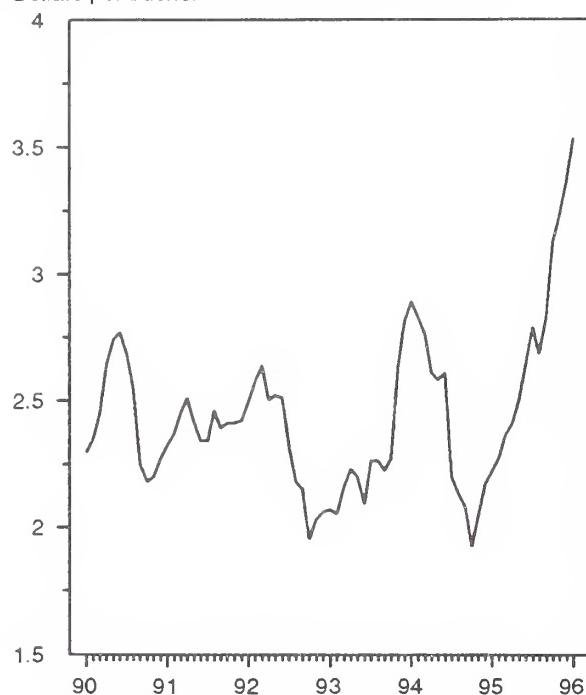
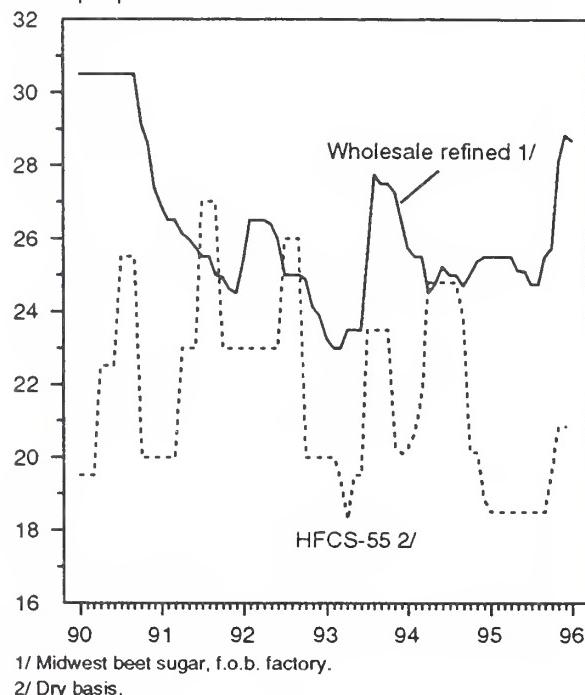


Figure 4

U.S. Sugar and HFCS Prices

Cents per pound



A FARMER'S PERSPECTIVE OF THE ECONOMICS OF SUGARBEET PRODUCTION IN THE RED RIVER VALLEY

Craig Hertsgaard

Red River Valley Sugarbeet Growers

Some traditions are worth changing, some are not. The traditional family farm of Eastern North Dakota and Western Minnesota has undergone some profound changes in the last twenty-five years, even though from the outside, it may look the same. I am a fourth generation family farmer. I farm together with my brother, just like my father and his brother did, and my grandfather and his brother. I drive tractors, work in the shop, and if my clothes are clean enough, sit down in my office and use modern tools like computers and satellite fed information screens to manage my business.

Red River Valley farmers broke many family farm traditions about twenty-five years ago and started the modern business of farming. I remember when I was in college, and that was a lot less than twenty-five years ago, the city kids used to call certain things rural. Things like obscure jokes, classes that were under 400 students, and the like. The Ma and Pa Kettle and American Gothic idea of a husband and wife and a pitchfork had been pretty much fixed as typical farm life.

Economically speaking, most pre-1970 farms fit a traditional mold. The major goals were to increase yields and reduce cost. That meant more bushels, more tons, and more mechanization. The price we received for our crops was out of our control. Government became permanently entwined in farm pricing following the Great Depression years of the 1930's and institutionalized in the 1949 Food Security Act. Farmers focused all their attention on reducing cost per unit.

A significant price spike in the wheat market in the early 1970's made farmers re-evaluate how they were making money. They could buy new cars, get color TV's and send their kids to college just like their cousins who had moved to the city. Up until that time most farmland was owned by the operator or by close relatives. A small portion of a farm was leased. Farms grew rapidly in size because kids valued what money could buy more than the family farm. Instead of staying home and accepting a lower standard of living, they went to college and moved into other professions. Farmland that did not have another generation to operate it was rented out. Those farms that remained, absorbed the available land and farm size grew. A farm that leased one third of the acres they operated in 1970, probably leases two thirds today, usually for a term of three to five years. Some for as short as a year at a time. Farmers no longer had to fit crops into land they already had. Expansion and contraction could occur without disrupting the core farm unit. That is a significant change when it comes to operating a business.

Another thing that happened during that period was that Red River Valley farmers took some of the money they made from high wheat

prices and bought a deteriorating American Crystal Sugar Company. Two other groups of farmers followed, and two other sugarbeet processing cooperatives were formed, bringing the total to three. Sugarbeets were a natural fit in our climate, but the high investment needed to raise the crop convinced farmers that they must have more control. Control not only over what they were paid for their sugarbeets, but whether anyone would be there to buy them.

I've spent a couple of minutes explaining what happened twenty-five years ago, because three significant changes occurred that affect how I and my neighbors will approach sugar production in the future. First, we realized that reducing cost per unit can only go so far to make a farm business profitable. Secondly, farmers can adapt to changing market signals much more quickly because they can change the size and scope of their operation though leased land. And finally, as in the case of the sugarbeet cooperatives, they can have some control over processing and marketing their product. I think these changes have allowed us to operate as true businesses rather than being stuck in an American Gothic print.

Sugarbeets require a much higher investment than competing crops but also have higher returns per acre. Since sugarbeets require two or three years of different crops between each rotation, they fit well with other traditional commodities. In order to deliver sugarbeets to a processing facility, you must be a shareholder in the cooperative. Farmers essentially buy pieces of the processing facilities when they buy a share. You cannot deliver any sugarbeets to the cooperative unless you own one share for every acre you harvest. Shares are freely bought and sold and have developed into a relatively liquid market. The only restriction is that you must be an actual farmer and the transfer must be approved by the farmer-director cooperative board.

The economic health of the individual farm is the ultimate concern in the sugar cooperative structure. Actions of the cooperatives must benefit its members. I distinguish that from shareholders of a corporation who derive their income from profits of the company. Corporate shareholders by and large have completely separate interests from those of the company in which they have invested. The livelihood of cooperative shareholders depends on their investment. Conversely, the efficiency of the cooperative depends on its shareholders. All the cash benefits of the cooperative are contained in the per ton payment for the sugarbeets. That keeps farmers delivering a product to the factory that is of the highest quality and that can maintain the lowest possible processing cost.

Many of the improvements in productivity we have made as sugar producers and processors is the result of our ability to meet each others' needs. A good example is sugar content as a percentage of total weight, and recoverable sugar per acre. A significant portion of processing costs for sugarbeets are associated with tonnage. More raw tons to process for every ton of sugar produced generally means higher costs. And since people are more interested in buying sugar than pulp, more sugar per ton means more revenue. While weather is often the major determinant of quality, production practices, can also play a major role. Very simply, payments are based on how many pounds of sugar per ton can

be extracted. and processing charges are applied on a per ton basis. As with most incentives based on cash, the effect was significant. (Fig. 1)

Percent sugar increased steadily after these incentives were introduced. As a farmer, this also increases annual risk. When weather steps in and overwhelms our best efforts, payments per ton can drop significantly. However, the long term effect is to increase the efficiency of the factories and the farm, and make us more competitive. This trend is evidence farmers can adapt as a result of changing market forces like any other business.

A significant issue for many of you is what kind of growth in sugar production can be expected from Red River Valley farmers. I think changing market signals in crop choices will be the major factor when we decide whether or not to grow sugarbeets. What I'll do is examine the comparative cost structure for not only sugarbeets but also other crops grown in the region. I will take cost of production and combine it with local yields and possible price trends. We can then calculate a Return on Outlays for each crop under different scenarios. My Return on Outlays is Net Profit/Acre divided by total economic cost per acre. The reason I have introduced this method of analysis is to take into consideration the amount of capital a farmer and his banker place at risk each growing season to achieve a projected profit or loss.

I know there are more complicated ways to calculate profit from a business venture. I've chosen a simple one for one thing, because I'm not an economist. This also happens to be the method we use on our farm to plan crops for the upcoming year. Secondly, when I've visited with others who compare returns from other commodities, they seem to be under the impression that sugarbeets offer significantly higher returns. On a per acre basis that is true, however, if you consider expense on a per acre basis as well, you may reach a different conclusion. Let's start with the cost breakdown for the crops involved (Fig. 2).

The likely crop choices are wheat, soybeans, corn, sugarbeets, and edible beans. I am using cost of production data for Eastern North Dakota as compiled by the North Dakota State University Agricultural Economics Department. Since NDSU does not compile costs for sugarbeets, I will use the most recent estimates for Minnesota and Eastern North Dakota from USDA. Methods of calculation are very similar to what USDA uses, but since production costs vary significantly by region, I believe local estimates to be most accurate. Prices for wheat, corn and soybeans in my first chart are those estimated by USDA for 1996. Forecasts for edible beans and sugarbeets are not made by USDA so I have made my own guesses from recent history. I would be happy to defend them.

Yield estimate is what we would use locally on our farm for this type of planning. Wheat and edible bean yields would be higher in the northern end of the Red River Valley, while corn and soybeans would be much lower. In the southern valley, corn and soybean yields would be higher and so the Net column would be affected. This is just an average. The sugarbeet estimate should be relatively uniform valley-wide.

Two other points, none of the revenue data includes government

payments. Under the current program, market prices exceed targets so no deficiency payments on wheat or corn are made. In later charts I have also omitted them because no one knows what they will be. Also, cost data does not include compensation for the farm operator. Farmers traditionally do not figure their own time when they decide to plant extra acres.

I would like to go back to the beginning of my presentation when I dealt with portion of farms that are rented vs. owned. Since the major portion of farms are now rented, land can be added or subtracted much more easily. If I get a better return on total expense growing edible beans rather than sugarbeets, even though the profit per acre is less, why would I want to add additional acres of sugarbeets instead of edible beans. (Fig. 2a) This illustrates comparative Return on Outlays using the data. The bars represent Return on Outlays. The superimposed lines represent Profit per Acre. Government deficiency payments would be made under the current program and these prices. They would make wheat have a positive return per acre and Return on Outlays.

1995 and 1996 are unusually high price years for wheat and feedgrains. Let's take a look at these charts for current prices. (Fig. 3 & 3a) I will not show the matrices for current and minimum prices. However, you can find them in the appendix of the handout. Since edible beans have not yet been affected by 1995's shortage of wheat and feedgrains, I did not change that number. Note the changes in profitability for wheat and corn. As you can see, current prices change the playing field considerably. If only they could last. This presentation would not be complete unless we took a look at what Return on Outlays would be when prices are at the lower end of the spectrum. Again, government deficiency payments for wheat and corn are not included (Fig. 4 & 4a).

I've personally received all of these price levels within the last five years. Thirty-six dollars a ton was about what I received for my sugarbeets in 1995. The reduction was due to quality problems I mentioned earlier. Over the long term, an adjustment to capital investment or cost of production would have to be made under these prices.

If you use a Return on Outlays approach to what farmers will choose to plant, it does not appear there is any real incentive to significantly increase sugarbeet plantings in the Red River Valley. The burning question is "If this method is valid, how do you explain the significant expansion in sugarbeet acreage that has taken place over the last fifteen years?" I think there are a number factors.

First of all, there were several new factories built in the 1970's when good wheat crops and high prices were available to finance them. Construction costs weren't nearly as high as they are now, and farmers were able to buy shares for a relatively low price. Also, factories purchased in the 1970's were run down and inefficient and simply updating those facilities accounted for a good deal of acreage increase with a lower level of investment per acre for processing. Quality incentives encouraged farmers to produce sugarbeets that were worth more money. Price per ton was able to stay ahead of increasing costs even though the price of sugar remained relatively stable.

Secondly, the mid-eighties brought lower alternative crop yields and depressed prices, especially for wheat. Farmers wanted to plant less, not more grain. From a production standpoint, the growing area needed to diversify and include additional crops in rotation with wheat.

Finally, the generation that initiated the farmer-owned cooperatives is moving into retirement. Half the farmers in American Crystal are younger than their early forties. That means when we invest in the processing facility it is at a much higher cost per acre than when it was originally purchased and expanded.

The last variable is what will happen with farm policy. The sugar section of Freedom to Farm deals a major blow to the traditional price support structure. Controls on marketings will be eliminated, the price floor during periods of normal production and consumption will be lowered, and price supports will be removed completely during periods of high production. Sugar producers have lost much of their ability to predict the price for their crop.

It will be difficult for me to make large investments in sugarbeet acreage when competing crops have a more favorable Return on Outlays. That's not to say sugarbeet acreage in the Red River Valley will shrink. We should have the ability to make incremental improvements in yield, and hopefully, reduce cost per acre.

Mother Nature generally gives us enough rain, but not always when we want it. It is not unusual to lose twenty-five percent of sugar production potential in the first three weeks after planting if the weather becomes hot and dry. Precision planters and developments in seed coatings now entering the industry should increase sugar growth potential.

Controlling weeds is one of the most expensive aspects of sugarbeet production. I am hopeful that biotechnology may offer help in the future. Experimental sugarbeet varieties are being tested that have been genetically engineered to tolerate compounds currently being used on other crops. If successful, these varieties would reduce both the amount and cost of pesticides used. Their commercial use is still five to ten years away. The net effect of improving production techniques will be to make dryland sugarbeet yields become consistent and more predictable from year to year.

The way I look at increasing income on my farm is very different than it was for my father and uncle 25 years ago. If they wanted to expand, they would most often add value to the acres they already owned. Sugarbeets returned more dollars per acre and were easier to get than more land. Today, rental land is more readily available as well as more efficient machines to cover additional acres. I think a large percentage of decisions are going to be based on the idea of Return on Outlays rather than simply net income per acre. They will also be determined by our ability to be consistent in revenue per acre. I think those "new" traditions are already in place.

Fig. 2

Comparative Profitability - Average Prices
=====

Crop	*Cost of Production	Yield	Average Price	**Net Profit Per Acre	Return on Outlays
Wheat	152	42	\$ 3.50	(\$ 5)	-3%
Soybeans	139	30	5.75	34	24%
Corn	215	100	2.50	35	16%
Sugarbeets	658	18	42.00	98	15%
Edible Beans	184	14	16.00	40	22%

Fig. 3

Comparative Profitability - 1996 Prices
=====

Crop	*Cost of Production	Yield	Average Price	**Net Profit Per Acre	Return on Outlays
Wheat	152	42	\$ 4.90	\$ 54	35%
Soybeans	139	30	6.75	64	46%
Corn	215	100	3.20	105	49%
Sugarbeets	658	18	42.00	98	15%
Edible Beans	184	14	16.00	40	22%

Fig. 4

Comparative Profitability - Minimum Prices
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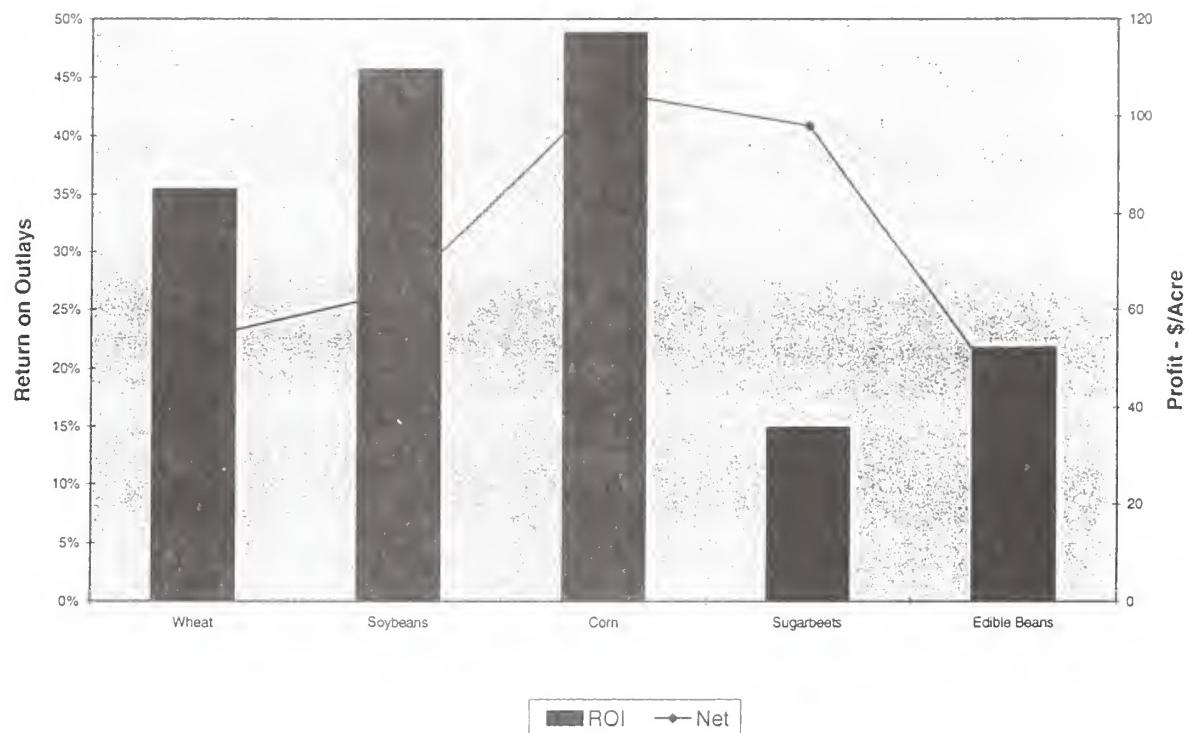
Crop	*Cost of Production	Yield	Minimum Price	**Net Profit Per Acre	Return on Outlays
Wheat	152	42	\$ 2.75	(\$ 37)	-24%
Soybeans	139	30	5.25	18	13%
Corn	215	100	2.10	(5)	- 2%
Sugarbeets	658	18	36.00	(10)	- 2%
Edible Beans	184	14	14.00	12	7%

Yield and price data for wheat, soybeans & corn stated in bushels; sugarbeet in tons; edible beans in cwt.

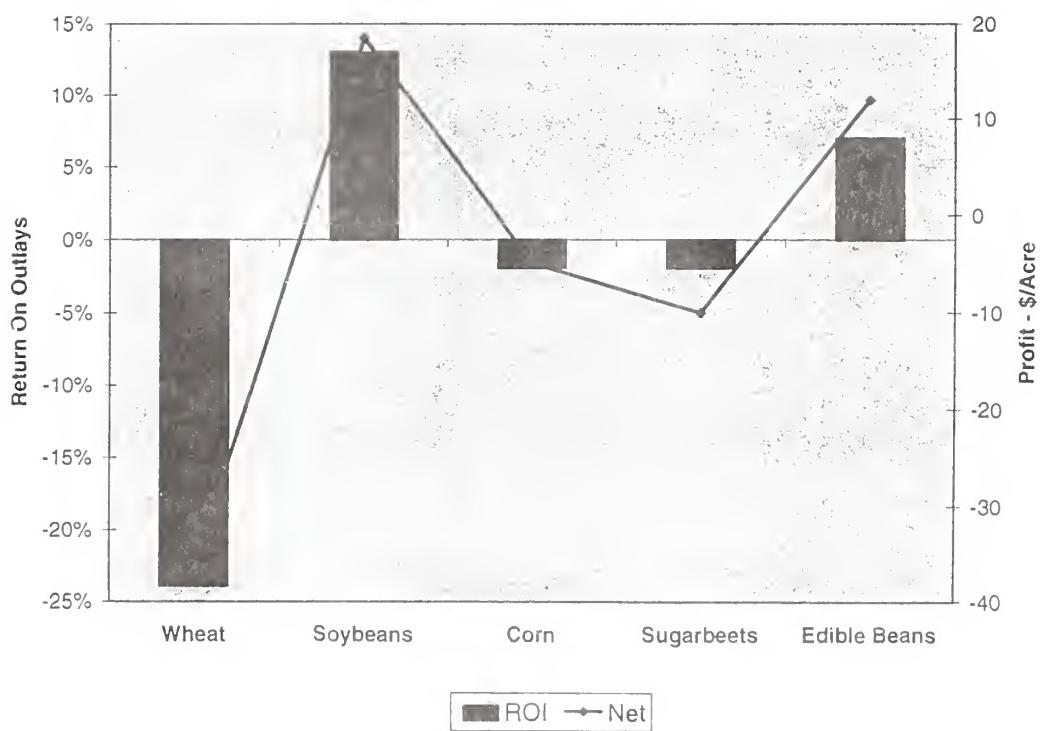
*Cost for wheat, soybeans, corn and edible beans, calculated by North Dakota State University Agricultural Economics Department-1996. Cost for sugarbeets calculated by USDA - 1992 crop year. Neither Cost of Production estimate includes operator contribution to labor.

**Farm Operator Compensation not included in this calculation.

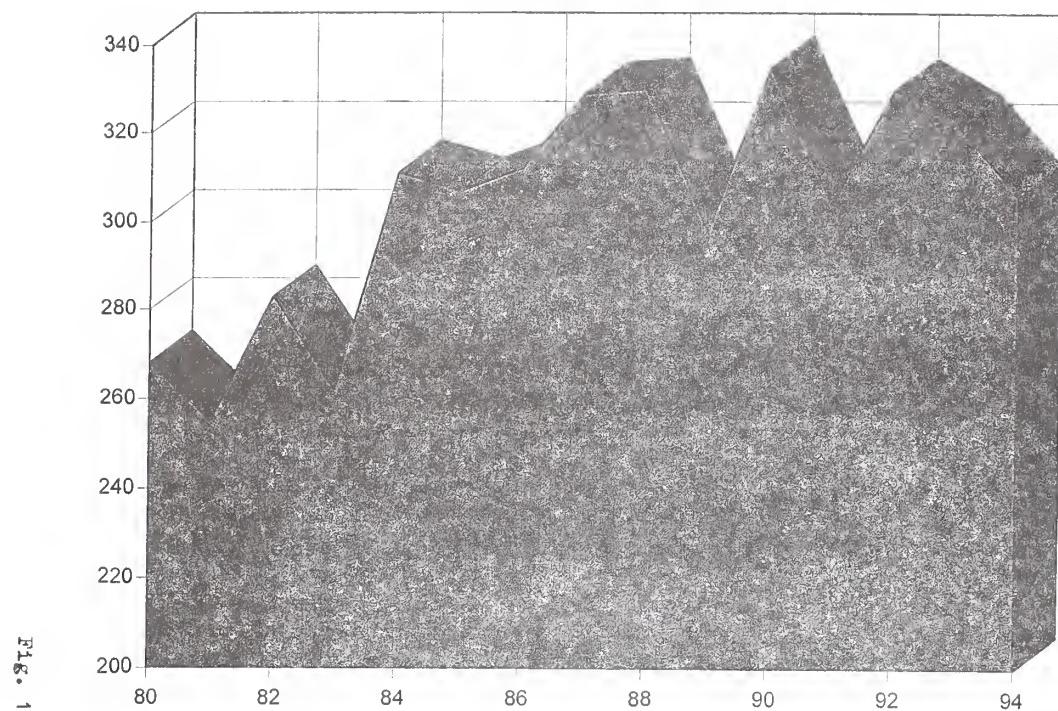
Comparative Profitability - 1996 Prices



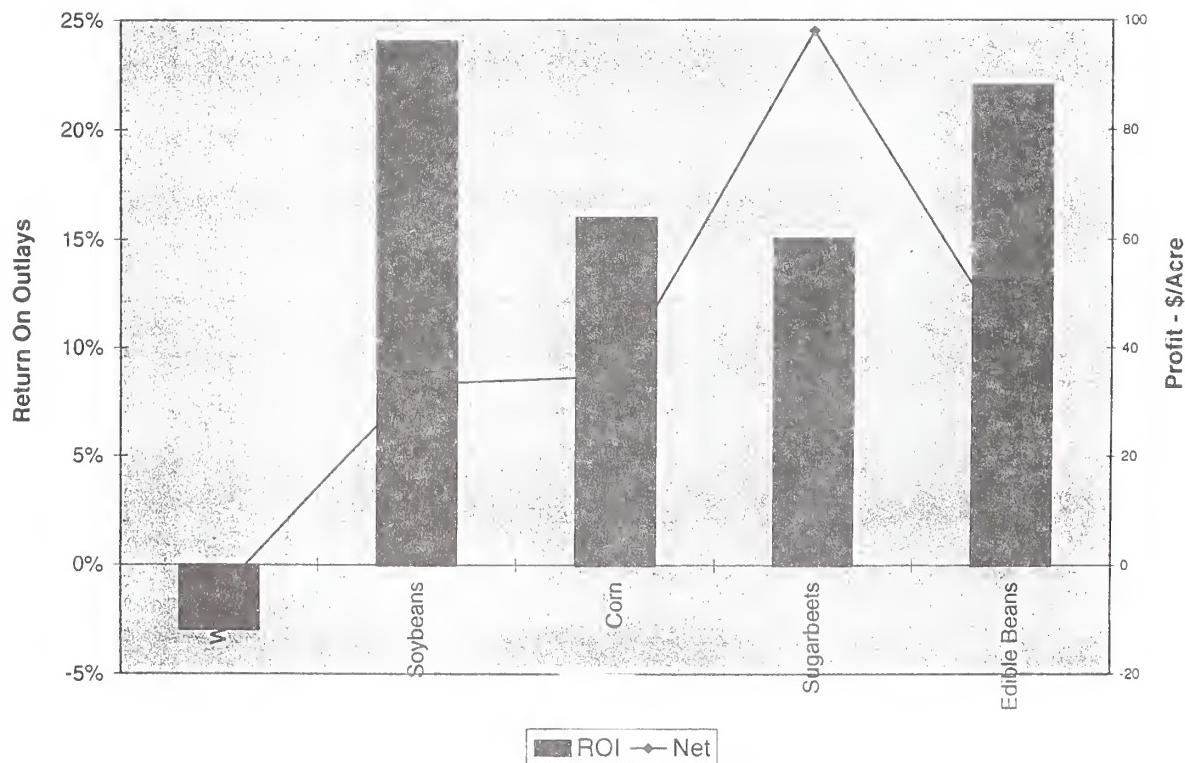
Comparative Profitability - Minimum Prices



Pounds Recoverable Sugar/Ton



Comparative Profitability - Average Prices



A LOOK AT THE WORLD SUGAR MARKET

Patrick Henneberry

Vice-President

Louis Dreyfus Sugar Company

Shortly after I agreed to speak at this session I received a package from the Department reminding me that the conference has been "redesigned to emphasize longer term agricultural prospects". In addition to discussing the current situation, I should also discuss some longer term issues. Well, what the author of this instruction probably did not realize is that, as a trader, this would open my horizon at least to the expiration of the March contract next week. Despite the possession of a trader's pre-disposition to the facts immediately in front of my nose, I will try to include some impressions for the longer term.

The world market, it is generally agreed, is in a surplus situation for the 1995/96 marketing year. The size of the excess supply is open for question and estimates range from 1.5 all the way up to 5 million tons. These forecasts have led to rather bearish outlooks for the current year. Despite these learned outlooks, the much heralded fall in sugar prices failed to materialize. In fact, a genuine tightness in nearby raw sugar has driven the New York No. 11 sugar futures contract to the highest level of the last 6 months. The March New York contract closed on the last trading day of December at 11.60 cents/lb. and steadily rose to a high of 12.92 cents/lb. on Tuesday. Even more interesting is the fact that the market is in a steep inverse with each month from March 1996 to October 1997 trading at a higher price than the succeeding delivery position. Should we not expect a market with a large surplus to be in a carrying charge configuration? This disparity between the bearish perception of the market and the reality of price resulting from the interplay of our old friends - fear and greed - is a real conundrum. Unwinding the riddle results in a better understanding of the phrase - the devil is in the details.

We began the 1995/96 marketing year with a very tight market. Refineries in the US, Korea, Morocco, China, and the FSU all shut down, or reduced production, due to lack of sugar during 1995. This is symbolic of the very low level of stocks carried in most countries. One of the primary reasons for the tightness was the heavy buying by China in 1995. By the late summer, or early fall, the warehouses of the world had been nearly swept clean and buyers were forced to wait for sugars from the new crop in November/December for their next source of supply.

The advent of this crop was delayed by wet weather in most of Central America and supply problems plagued the market through December. With everyone waiting for new crop supplies, the loading queues were severe and some vessels waited for over a month before getting placed on a loading berth. The continuing demand for nearby sugar in the first quarter was ensured by a delayed start to the Cuban harvest. In a deliberate attempt to maximize the crop (optimistically targeted at 4.5M tons) the start of the main harvest was delayed until the end of January. Those expecting delivery of Cuban sugars earlier sold for January shipment were forced to seek sugars from Central America or North Brazil to meet their requirements. Physical premiums for Central American sugars firmed as sellers withdrew and buyers scrambled to cover needs. As the crops in more and more nations have come into full swing the nearby tightness has become less severe, but prompt sugars still command a premium price.

Much of the attention over the last month has focused on the potential size of deliveries against the expiring March 96 raws contract. With the exception of Cuban sugars, there are few prompt sugars trading at a discount to the New York futures price. This structure suggests there will be little or no sugar delivered against the March contract and thus cannot persist if any significant long chooses to take delivery rather than pay the premiums for named origin sugars. The end result will be a convergence of the physical and futures prices. We have already seen a collapse of the nearby Thai sugar premium from 85 to 30 points. Similarly, tenderable sugars in the Western Hemisphere have traded at premiums of 15 to 30 points in recent weeks. The

willingness to pay a premium for the sugar is dependent upon the relative fear of receiving sugar on the wrong side of the globe if you take delivery of futures. A short to the US for re-export may be willing to pay a premium for Western Hemisphere sugar to ensure they are not caught with sugars from Thailand and subsequently higher costs of delivery.

The substantial premium being paid for March/May 15 shipment sugars has raised the possibility of limited supplies for the May contract. Most of the sugar available for May will already be produced and is deliverable against the March. Producers have jumped at the chance to capture the 70 to 100 point premiums over May offered by the market in recent weeks for the March delivery position. The sugar in the Western Hemisphere, with the exception of Argentina and South Brazil will largely be gone by the early summer.

Whether or not the decision by Cuba to delay the start of the harvest is successful in bringing about larger production remains to be seen. Early reports of sugar yields do not look too promising, and the much trumpeted 4.5M crop could prove difficult to achieve. If reports from recent visitors to Havana are to be believed, Cuba may not produce 4M tons. A crop that small could result in the Cubans having to buy back sugar to avoid shorting their previous buyers. A crop of 4M will also raise doubts about whether the large protocol sales to Russia and China will be fulfilled.

The tightness in the Western Hemisphere has been exacerbated this year by activities in the US market. The recent increase in the US sugar import quota of 400,000 tons tightened up the Western Hemisphere significantly. It seems likely that further quota increases will be needed to ensure adequate supplies in the US this summer. Increases in the import quota have a major impact on the Western Hemisphere balance sheet since about two thirds of the quota is allocated to Central and South American nations.

The market is already wondering if the Philippines and the Dominican Republic, both suffering reduced crops, will be able to fulfill their quota deliveries. Certainly both will have to import sugars in order to

supply both their domestic markets and the US quota. There is talk of re-allocating shortfalls if these or other countries fail to fulfill the increased quota.

In addition to the larger quota imports, the US is also expected to drastically increase the amount of sugar imported under the re-export program. Part of these imports are replacing white sugar exports that occurred during 1995, while the balance reflect a healthy amount of tolling into the relatively high white sugar premiums offered by the world market this year. Buyers of sugar for re-export are largely forced to obtain their supplies from the March or May as sugars later in the period are either too high in polarization to be acceptable in the US, or are more geographically remote and dutiable. Recent changes in administrative policy make it harder for refiners to take advantage of the inverse in world market prices and delay imports until 1997.

While physical premiums in the Western Hemisphere have remained firm the premiums in the Far East have come under severe pressure over the last month. Early yield reports from Thailand have shown high sugar content in the cane. With production now forecast at between 6 and 6.3M tons and white sugar exports likely to be limited to around 1.3M by logistical constraints, over 3M tons of raw sugar will be available for export. The increased availability of Thai raws is likely to coincide with another record crop in Australia and a more normal crop in Southern Africa. The advent of these crops in the late spring and early summer may spell the end to the tightness manifesting itself in the first half and bring prices to levels closer to those forecast at the beginning of the year.

While supplies are likely to be plentiful by the end of the year, much attention will focus on potential demand, particularly in China. Total Chinese imports last season were estimated at 3.2M tons, but this season imports should be less than 1.5M tons. Lower import requirements have resulted not only from a considerable recovery in production but also from the ability to draw down stocks built during last seasons hectic buying activity. Thai premiums have weakened with the realization that a large proportion of Chinese requirements have already been

shipped from Australia and another large proportion will be accounted for by the Cuban protocol business.

Forecasting the likely direction of Thai premiums will require an accurate assessment of how much sugar the Australians will sell outside the Far East and also how much South African sugar will reach the Far East.

While the Cubans delayed the start of their harvest it is expected that millers in South Brazil will seek to take advantage of the large inverse in the world market by starting their harvest earlier than normal and once again selling sugar for May/July 15 delivery. Of potentially more interest than the starting date of the harvest will be the quantity of raw sugar available for export. The local sugar market is much higher than world levels and alcohol for the local market also yields a higher return than raw sugar exports. Given these relative values and the current world market structure it seems likely that millers will concentrate first on local market opportunities, secondarily on white sugar exports and dedicate the residual to raw sugar exports. Certainly millers will try to put some of their raw sugar sales into the May 1996 position to take advantage of the high relative premium, but dedicating too much attention to this will result in lost opportunities in the local market. It is possible that the Brazilian government may allocate less export quota in the early season until local market demands for both sugar and alcohol are more adequately met. This could further delay the flow of exports to the world market and trap some of the surplus in Brazil until the next marketing year.

Turning to the whites market, the physical whites premiums for non-tenderable sugars have eased significantly over the last month. Thai white premiums have eased reflecting ample supplies in the Far East. The historically high white premium has encouraged a recovery in the level of tolling in countries such as Malaysia, Korea, China and the US. Always looming large in the background is India, who are facing the prospect of a massive build-up in stocks. These stocks, if realized, are likely to put a financial strain on the millers. Reports from India suggest that debts to the farmers are starting to grow a situation that could result in a reduced crop in 1996/97.

Despite making export sales of around 0.5M tons only around a third of this sugar has so far been shipped, mainly to Sri Lanka, Russia and Indonesia. A much accelerated program must be embarked upon if export projections are to be met. Achieving sales of 1M tons will require major additional sales and will force Indian sugar into markets in direct competition with Thai and Brazilian sugar. Even if India does achieve exports of 1M tons this would still leave internal stocks approaching 6M tons. This high local stock will trap a significant portion of the global surplus within India and keep the full burden of the global surplus from being felt in the marketplace.

The current abundance of non-tenderable white sugar in the Far East is further exacerbated by the potential for increased exports out of Central and South America. As previously mentioned, Brazil is likely to maximize white exports in the early summer while Mexico will continue to be a major whites supplier into the second quarter. For the first time in many years Argentina will also feature as a potential whites exporter.

The EEC white physical premiums have fallen over the last month, but to a lesser extent than Thai whites. Given the re-stocking of EEC supplies, both in the context of statutory minimum and blocked stocks, the export availability in the community should fall by 1.6M tons. This is the fundamental factor behind the historically high white sugar premiums we have seen this year. A major market for EEC sugar this year is likely to be Turkey, where increased domestic consumption and a poor crop should result in imports of around 600 thousand tons. While they have already bought a substantial amount of white sugar there are rumors now circulating that the Turkish authorities have considered switching their purchases from whites to raws. If this proves to be correct it would have significant implications for white sugar values.

The world market this year can be divided into two distinct halves. In the first half we see the culmination of the tight markets of the last year. The advent of the Southern Hemisphere crop should see the end of the tightness and open the way for a lower priced

and more amply supplied second half. If analysts are correct, the market is faced with a potential build-up of stocks of over 4M tons. Economic theory suggests that when supply exceeds demand prices should fall. Whether they do or not will depend upon how soon (or even if) the surplus is brought to the market. The most likely scenario in my mind is that the March and May expire at a premium and the market is left facing summer prices not substantially different than those reflected by current futures values for July and October.

One of the reasons why prices appear reluctant to fall to the most pessimistic of forecasts is that homes have already been found for a large proportion of this surplus. With India's apparent inability to export more than 1M tons and the EEC's statutory re-stocking over half of the world's stock building can be accounted for these 2 nations alone. The market will now have to decide where the rest of surplus is to be held and in what form, be it Thailand or Brazil, in raws or in whites.

One of the features of the sugar market in the last several years has been the increasing interactions that many nations have allowed with their local markets. The FSU, Eastern Europe, Mexico, Chile, China, and Brazil have all allowed more interaction of their local industries with international markets. The US has also allowed considerable interaction through the re-export program.

In Mexico, for example, producers are taking advantage of market inverses to export the stocks needed for the last months of the year early in the season and replace those sugars with cheaper supplies late in the year. This has obvious market benefits and eliminates or substantially decreases the cost of financing these inventories. Others have allowed a more straight forward access to their internal markets through variable duty systems.

These interactions allow the usual straight forward supply and demand considerations to be passed through the market mechanism into world markets. They also allow the influences of relative interest rates, exchange rates, and local governmental energy and agricultural

policy to be passed through the system. In my opinion this is all to the better and will allow markets to function more efficiently in the future. Through initially controlled access both the world market and internal market participants gain experience with how the "other" markets work without overt damage to either side. It does make it increasingly important to broaden the base of information gathered in making decisions on either world or domestic markets.

Internal markets around the world are used to stable prices at levels substantially higher than current world market levels. Few nations have internal markets that are directly linked to world values. Most have substantially higher prices. These prices are often compared to world market values and calculations of the cost of the domestic program are calculated. These are the engines of change in policy throughout the world and over time, the clear trend will be toward more interaction in all markets.

One should not expect to achieve prices that are as low as reflected in world markets. The pricing of sugar in world markets reflect the least common denominator of price and do not reflect the many contributions of local producers, processors, warehousemen and distributors that add value in local markets. Longer term, prices will probably move toward the actual cost of production as economic theory suggests. Local markets that move to allow greater access will ensure that their are reflected through price signals into world markets.

Another longer term trend that has occurred in many nations is the move toward minimal inventories. As governments are removing themselves from the market, private interests find it prohibitively expensive to carry large stocks. The resulting system is cost efficient, but more fragile than in the past. The result are periodic shortages in local markets and the need for a more direct interaction internationally. This may result in quicker price responses in both world and domestic markets in the next several years.

The gradual move toward freer trade will result in somewhat lower prices. It will also likely result in more volatile local markets as the price signals from

exterior sources are passed back into local markets. The traditional benefit of stability of price in local markets will become less and less true as trade becomes freer. Opportunities will present themselves in external markets that attract sugars, if only temporarily, from local markets. This will cause price changes not initially expected or welcomed by all local participants. I think that the longer term benefits of trade will more than offset these short run discomforts.

USDA PERSPECTIVE ON THE OUTLOOK FOR COTTON

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1995/96 Situation**U.S. Production**

U.S. cotton production is estimated at 18 million bales, 8.5 percent below last season's record 19.7 million. Upland production is estimated at 17.6 million bales and extra-long staple (ELS) is projected at 361,000. Last August, the total crop was forecast at 21.8 million bales, as planted area had climbed to its highest since 1956. Since then, however, weather and insect problems significantly reduced yields and the crop size across the Cotton Belt. The national average yield is forecast at 540 pounds per harvested acre, 168 pounds beneath the record set in 1994. Despite the production problems, the 1995 acreage abandonment rate is estimated near 5.5 percent, below the previous 10-year average.

Production in the Southeast is estimated at 3.9 million bales, down 15 percent from the August estimate, but 6 percent above last year. Despite a yield of only 545 pounds per harvested acre this season, a 60-percent increase in area pushed output in the Southeast to its largest since 1937. Georgia's production, at nearly 2 million bales, is up 400,000 bales from last season and a new State record. Similarly, North Carolina's crop is forecast at 830,000 bales, the largest since 1928.

On the other hand, the Delta States are expected to produce 5.9 million bales, 1.5 million below the August estimate and a million bales under last season's record crop. Yields in the Delta declined on average over 200 pounds this season and are estimated at only 604 pounds per harvested acre. Mississippi is expected to produce 1.8 million bales, 13 percent below the 1994 crop. Cotton production in Arkansas and Louisiana is also down from a year ago, at 1.5 million and 1.4 million bales, respectively.

Similarly, estimates show upland yields and production lower this season in the Southwestern and Western States. For the Southwest, production is estimated at 4.6 million bales, with yields averaging only 366 pounds per harvested acre. In the West, the crop is expected to total 3.2 million bales based on a yield of 960 pounds.

In contrast to upland, estimates for ELS cotton are higher this season. An increase in area of

more than 25 percent offsets a yield decline of over 150 pounds per acre. Yields are expected to average 821 pounds per harvested acre, the lowest in 4 years, while 1995 ELS production is similar to the 1993 crop. The final USDA 1995 upland and ELS cotton production data will be released May 9.

Foreign Production

The 1995/96 marketing year brought with it a continuation of the rebound in foreign cotton production and supplies begun last season. The 1993/94 marketing year marked a ten-year low in available world cotton supplies, while world consumption was 24 percent higher than it had been just 10 years before. This resulted in above normal prices which continued through 1994/95, stimulating a 10-percent increase in harvested area in 1995/96. Despite persisting low yields, foreign production grew 7 percent to 70.6 million bales.

Pakistan accounted for 38 percent of the increase in foreign production in 1995/96. Record area dedicated to cotton, favorable growing conditions and a low incidence of pest and disease problems contributed to estimated production of 8.5 million bales, Pakistan's second largest crop on record. The massive GAP irrigation project enabled Turkey to expand area and boost production nearly a million bales to a record 3.9 million bales. Mexico and Argentina accounted for most of the 650,000 bale increase in Latin American cotton production. In Mexico favorable weather conditions and ample government support under PROCAMPO and other direct subsidies combined with reduced incentives for corn production boosted cotton output. Reduced plantings of other winter and spring commodities in Argentina resulted in a dramatic increase in area planted to cotton. Production in African Franc-Zone countries grew 455,000 bales in 1995/96 due to a 10-percent increase in area prompted by high international prices. Franc Zone producers are reaping substantially higher local prices following the devaluation of the CFA franc. Some areas were also able to increase input use as general inflation and input cost growth has remained less than the currency change. China's expected crop of 20.0 million bales is slightly above its 1994/95 outturn of 19.9 million. While China's area, estimated at 5.5 million hectares, is nearly unchanged from last year, area has shifted out of the North China Plain, the region most plagued by the bollworm. This shift, along with favorable weather across most cotton growing regions, helped farmers attain average yields.

Australia's 1995/96 production is estimated at 1.6 million bales, up 100,000 bales from last year's drought-reduced crop. Area is estimated to increase 22 percent from last season with virtually all the increase coming from non-irrigated areas due to shortages of irrigation water. The relatively small increase in production, compared to the increase in plantings, reflects the sharp decline in average yields resulting from the increased proportion of rain-fed cotton.

The late onset of the 1995 monsoon and poor growing conditions in parts of the country caused Indian cotton yields to decline 10 percent from 1994/95. Despite record area of 8.4 million hectares prompted by high prices, production declined to 10.7 million bales from over

10.8 million a year earlier. Cotton output in Brazil is down over 200,000 bales due to lower area attributed to growers' indebtedness and the high cost of agricultural inputs. Production in the FSU is estimated down 220,000 bales from 1994/95 due to the diversion of cotton area to grain and vegetable production and the lack of inputs owing to economic difficulties.

U.S. Consumption and Trade

Domestic mill consumption of cotton in 1995/96 is projected to decline for the first time since 1990/91, as a drop in consumer demand and relatively high cotton prices have slowed textile mill activity. Mill use is forecast at 10.5 million bales this season, 6 percent below 1994/95's near record. Data for the first 5 months of 1995/96 (August-December) indicate U.S. mills have consumed 4.3 million bales, compared with 4.7 million a year ago. On a seasonally adjusted annual rate basis, cotton consumption during August through December averaged 10.4 million bales.

While mill demand for cotton has declined 8 percent through the first 5 months of 1995/96, manmade fiber use has fallen nearly 14 percent. Higher manmade fiber prices this season have contributed to the reduction in mill use. However, despite the dip in textile mill activity this season, competitively priced cotton has allowed its fiber share to rise. This can be illustrated by cotton's share of fiber use on the cotton system, which has increased each year since 1983. For the first 5 months of 1995/96, cotton's share has averaged 78 percent, the highest since 1966.

Although cotton mill use has weakened somewhat this season, consumption is expected to rebound as demand for U.S. cotton textile products remains robust both here and abroad. Cotton textile exports surpassed the one billion pound mark, a new record, during calendar year 1994. In 1995, cotton textile exports exceeded the 1994 level by nearly 20 percent, reaching 1.3 billion pounds. On the other hand, cotton textile imports have also continued to expand, exceeding 4 billion pounds in 1995, a new high. Nevertheless, cotton textile exports continue to moderate increases in the textile trade deficit.

U.S. raw cotton exports are projected to fall this season from 1994/95's extraordinary level in which the United States was well positioned to take advantage of an elevated demand for cotton. Increased competition for a smaller market abounds in 1995/96 as major producers outside the United States have adequate supplies to move into the export market. However, U.S. export sales and shipments have been solid this season, with commitments rising to 7.8 million bales by early February. Currently, U.S. exports are forecast at 7.2 million bales in 1995/96, resulting in a U.S. share of world trade at approximately 26 percent. Although below the 33 percent posted last season, the U.S. share remains above the 5-year average.

With U.S. cotton supply 2.5 million bales lower this season and demand forecast to shrink 2.9 million, stocks are expected to remain relatively low. Based on these estimates, ending stocks

are projected to rise only 350,000 bales to 3 million. This implies a continued tight stocks-to-use ratio of only 17 percent and the apparent need for larger production in the United States in 1996/97.

Foreign Consumption and Trade

While not increasing as fast as production, foreign consumption is expected to increase 2 million bales in 1995/96, the first increase registered since 1989/90. A number of countries are expected to experience stronger consumption in 1995/96, the larger of which are: China, 600,000 bales; Turkey 310,000 bales; India 216,000 bales; and Russia 200,000 bales. The lag in Chinese consumption experienced over the last two years appears to have subsided as current yarn production and cotton use data indicate strong growth over last year. Turkey has shown the strongest, consistent growth in consumption of any country with consumption growing an average of 12 percent annually over the last four years. Significant investment has increased the efficiency and capacity of the Turkish textile industry. This combined with an abundant supply of cheap inputs, particularly labor and cotton, has helped to improve the industry's competitiveness.

Foreign cotton imports in 1995/96 are off nearly 2.3 million bales from last season because of reduced import needs by major foreign producing countries. Last season, crop problems in several major foreign producing countries, notably China, India and Pakistan, necessitated large imports, in some cases record high, which helped explain near-record U.S. exports. While imports are down in 1995/96, the easing of the tight supply situation in Pakistan and India and the subsequent lifting of trade restrictions will enable these countries to increase exports this season. Slightly better production in Franc-Zone Africa and Australia will facilitate somewhat higher exports. These gains in exports by foreign producers will come at the expense of the United States and the Former Soviet Union, whose exports will likely decline 23 percent and 18 percent, respectively this season.

Outlook for 1996/97

U.S. Production

The U.S. outlook for 1996/97 points to lower planted acreage but higher production. Despite a second year of strong cotton prices, price levels for competing crops and last season's expensive cotton crop will likely result in cotton area below that of 1995/96. Total cotton acreage in 1996 will likely range between 15 and 16 million acres, compared with nearly 17 million this season. While upland acreage is expected to decline, ELS area is projected to jump significantly as tight supplies have pushed ELS prices to double those of upland cotton. Meanwhile, the first official estimate for planting intentions is the Prospective Plantings report which will be released on March 29.

Although area could shrink by nearly 2 million acres next season, a return to more normal yields would push the 1996 crop above this season's 18 million bales. If the abandonment rate is near the 10-year average of approximately 7 percent, harvested area, based on the indicated planted acreage, would range between 14 and 15 million acres in 1996/97. While abandonment is expected to exceed this season's 5.6 percent, yields are projected to rise from the 12-year low of 540 pounds per harvested acre posted in 1995. Preliminary yield projections for 1996/97 range between 650 and 670 pounds per harvested acre, with the midpoint of this range near the 30-year trend yield.

In 1996, the U.S. cotton industry could witness a second record crop in 3 years. Based on the acreage and yield assumptions presented here, cotton production would likely range between 19 and 21 million bales in 1996/97. Coupled with the current beginning stock estimate of 3 million bales, total cotton supplies next season should range in the 22 to 24 million bale area.

Foreign Production

World cotton supplies, cotton price trends, and the price of cotton relative to other commodities will impact cotton area in 1996/97. Although cotton prices are relatively high, prices of other crops including wheat, corn and soybeans are now at record or near-record levels. Larger cotton production and an improved stocks-to-use ratio during the 1995/96 marketing year caused the world cotton price to slip below the 1994/95 level. The Cotlook A Index has averaged 88.35 cents per pound thus far in 1995/96, and the International Cotton Advisory Committee forecasts a season average of 86 cents. This compares to the 1994/95 average of 91.85 cents per pound. Declining cotton prices, coupled with strong competing crop prices will not provide incentive to increase area in most foreign producing countries. In fact these and other factors will cause area planted to cotton to decrease in some major producing countries including Paraguay, India and Turkey. Nevertheless, the relatively high level of international cotton prices will offer enough incentive to maintain or increase area in other countries keeping the decline in foreign area to a minimum. Our current forecast indicates foreign area could total 28-29 million hectares, compared with 28.9 million this season.

Prospects for foreign cotton area in a few individual countries are highlighted below:

- Pakistan seems likely to sustain its record 3.0 million hectare area in 1996/97 following a 13-percent increase this season. Due to strong demand by the domestic textile industry and a less restrictive trade policy, domestic seed cotton and lint prices remain relatively high despite estimates of the second largest crop in history this season.
- Mexico's cotton area is expected to increase significantly in 1996/97 due to producer response to high international cotton prices and the expectation of a continuation of

substantial government subsidies. This combination has already caused shifts in area from soybean to cotton in a few large cotton producing states.

- Prospects for 1996/97 cotton area in China are somewhat uncertain. Cotton production will continue to face the same constraints as in the last few years: the profitability of competing crops, a continuing widespread bollworm infestation, and the lack of a legal free market for cotton farmers. However, Xinjiang production has been growing steadily as area shifts westward from the North China Plain. China's cotton area is expected to remain at about 5.5 million hectares 1996/97.
- In the former Soviet Union, competing interests in maintaining or expanding cotton production to earn hard currency and expanding food production combined with concerns regarding land salinity from cotton production will keep area at about last year's level.

Based on current indications for foreign cotton area, any increase in foreign production would be attributable to increased yields. Assuming normal weather and growing conditions and continued control of insect and disease problems in China and Pakistan, foreign cotton yields in 1996/97 could increase slightly to around 530 to 550 kilograms per hectare to exceed the 1990-1994 average.

Given the prospects for area and yield, foreign production could total 70 to 72 million bales, with improved yields offsetting a slight decline in area.

U.S. Consumption and Trade

Cotton mill consumption in 1996/97 is projected to rebound from this season's retrenchment. As the U.S. economy expands and consumer confidence rises, purchases of apparel products and home furnishings will likely increase. Cotton textile exports are also expected to play a vital role in the growth of U.S. cotton mill consumption in 1996/97. Cotton textile exports rose for the eleventh consecutive year in 1995 to a new record, due in part to the positive effects of the North American Free Trade Agreement (NAFTA). Continued participation in agreements such as NAFTA should bode well for U.S. cotton textile products in the future. While textile imports are also expected to increase, more and more of these products are being produced with U.S. cotton. Overall, improved demand for U.S. cotton products here and abroad could push U.S. cotton mill use above the 1994/95 level. Current projections are for 1996/97 consumption to range between this season's 10.5 million bale estimate and 11.5 million bales.

U.S. cotton exports in 1996/97 are expected to remain near the projection for the current season. Although foreign production and consumption are projected to increase slightly next season, world cotton trade may experience a slight decline as many producing/consuming

countries become more self sufficient in 1996/97. This would limit foreign import needs and possibly provide available exportable supplies to compete with U.S. cotton. Early projections for U.S. cotton shipments during the 1996/97 season range between 6.5 and 7.5 million bales. With U.S. exports near the current season's level and world cotton trade also about unchanged, the U.S. share of the world market would remain close to 1995/96's 26 percent.

Total U.S. cotton demand next season is not expected to match the larger 1996 crop, and stocks may rise. Based on the scenario presented here, carryover stocks could increase to the 4.5 to 5.5 million bale level, resulting in a stocks-to-use ratio between 26 and 29 percent. However, if production problems exist across the Cotton Belt again in 1996/97 and use reaches the upper end of the range presented here, carryover stocks would remain near the beginning level. This latter scenario would imply a lower stocks-to-use ratio than in 1995/96 and reflect the need for a large U.S. cotton crop in 1997.

Foreign Consumption and Trade

Foreign consumption is expected to increase 1 to 4 percent to 76 to 78 million bales in 1996/97. Current economic forecasts indicate 2.5 percent annual Gross Domestic Product (GDP) growth in major industrialized countries in 1996 and 1997. This positive economic outlook will support larger use despite the resiliency of cotton prices. The forecast for foreign consumption in 1996/97 assumes continued recovery in Russian cotton consumption. Russian consumption fell to a low of 1.3 million bales in 1993/94, 76 percent below the 1990/91 level and has only begun recovering this season. Additionally, Turkey's recent entry into a customs union with the European Union will support continued growth in its consumption.

With a significant rebound in foreign cotton production this season and output about unchanged in 1996/97, a larger percentage of the cotton consumed in foreign countries will come from local production. Import demand in China will probably weaken, and cotton use in traditional high-income importing countries such as Japan is on a downward trend. Overall foreign cotton imports may be down nearly 2 percent to around 27 to 28 million bales. At the same time, foreign exporters who are expected to compete for a much greater share of world trade this season will do about as well in 1996/97.

The current scenario for world cotton production and consumption indicates that production will continue to outstrip consumption, although by a somewhat smaller margin than in 1995/96. This implies world cotton stocks will continue to grow in 1996/97 to reach a stocks to use ratio of 39 to 40 percent, about two percent higher than in 1995/96. The forecast increase in the U.S. stocks-to-use ratio from the current level of 17 percent to about 26 to 29 percent is certainly desirable considering the tight supply and use situation of the past two seasons. As far as the foreign situation is concerned, the forecast level of foreign stocks to consumption will likely be the highest since 1992/93 when the A-Index averaged about 58 cents per pound.

Long-Term Outlook

U.S. Projections

Over the next decade, the outlook for U.S. cotton continues to look positive. The cotton sector, as a whole, is expected to continue to gain as a result of the NAFTA and GATT agreements. While growth rates in domestic mill use and exports may be affected by the agreements, increased world trade is anticipated as barriers to trade are lowered or eliminated.

Growth in domestic mill use is projected to slow as import quota restrictions are eased over the next 10 years. Despite the potential for significant increases in textile imports, primarily apparel, larger U.S. textile exports of yarn, fabric, and semi-processed apparel items should continue to support domestic mill use. Cotton mill consumption is expected to rise 2.5 to 3 percent per year over the next 5 years, surpassing 12 million bales by 2000/01. Beyond 2000, growth in U.S. mill use is expected to slow further, but remain positive. By 2005/06, domestic mill consumption could approach 13.5 million bales.

Increased world economic activity should result in a growing demand for both cotton textile products and raw cotton. With world trade growing between 1997/98 and 2005/06, the United States is projected to maintain a large share of the world market, capturing a 25 to 26 percent share over the next decade. U.S. exports are expected to rise less than 2 percent over the next 5 years, averaging about 7.5 million bales. Beyond 2000, export demand for U.S. cotton is expected to more than offset the slowing mill consumption growth. During this period, exports are projected to grow more than 2.5 percent per year and average more than 8 million bales annually.

With larger total offtake as a result of the expanding world trade, U.S. cotton production will also need to rise to meet this demand. While cotton area is foreseen below the 1996 expectations, planted acreage between 1997/98 and 2005/06 is expected to range between 14 and 15 million acres annually. The national average yield is projected to continue rising near the 25-year trend of approximately 10 pounds per year, reaching 750 pounds by 2005. With harvested area between 13 and 14 million acres during this period, production is expected to range between 19 and 22 million bales annually. As stocks are rebuilt and adequate supplies are available to meet the rising demand, the U.S. cotton industry will have the opportunity to provide the global market with more cotton and cotton-containing products.

World Trade

World cotton trade is expected to average 1.8 percent annual growth during 1996-2005, largely reversing the declines suffered during the previous 10 years. World cotton trade fell from a peak of 33.4 million bales in 1986 to as low as 25.6 million in 1992, in large part due to declining Russian imports. Import growth is foreseen in Russia and elsewhere after 1995

and, by 2005, world exports are projected at about 33 million bales.

Both foreign consumption and production growth have slowed to negligible rates during the last 10 years, but are both expected to rebound to about their long-term average growth of 2.2 percent per year. The projection for world cotton consumption to expand at an annual rate of approximately 2.3 percent during 1996-2005 underpins the outlook for relatively strong rate of import growth. However, a key uncertainty in the projection is the extent to which the recent gains in cotton consumption associated with a shift in consumer fiber preference toward cotton, and away from synthetics, can be sustained over the projection period.

Foreign production has stagnated in recent years, as smaller harvests in China and the FSU have offset gains elsewhere. High levels of input use and poor water management have rendered useless much of the area abandoned in Central Asia during the 1990's, and pesticide resistance has hampered production in China. Further losses in these regions are not expected, and China's and Central Asia's production is expected to resume growth, although not as quickly as elsewhere.

The rapid consumption growth of the early 1980's, spurred by prolonged economic expansion and sharp share gains versus other fibers in some markets, is not expected to resume. In the short term, consumption growth in the traditional developed cotton importers is likely to be constrained by relatively sluggish economic performance, and in Eastern Europe and the FSU by economic restructuring. In the long term, the liberalization of textile trade under the Uruguay Round Agreement will also constrain cotton imports by the most developed traditional importers, such as the EU and Japan. In contrast, rapid consumption growth is expected in many developing countries and steady growth is expected to continue in major cotton producing countries. However, the pace of this structural shift will depend on the implementation of the phase out of the Multifiber Arrangement. While it is anticipated that the most significant changes will probably be delayed until the end of the implementation period, large uncertainties remain about the timing of liberalization and shifts in garment production both to and among developing countries.

Importer Developments

Global cotton trade to 2005 will depend largely on consumption patterns in importing countries. World trade contracted for two reasons beginning in the late 1980's--the virtual collapse of Russia as a consumer and importer of cotton, and the continued shift of spinning from traditional importers to cotton producing countries. Russia's cotton consumption fell almost 80 percent between 1989 and 1994, to 1.2 million bales, during the restructuring of Russia's political, economic, and foreign trade systems. Elsewhere, other traditional cotton importing countries found it less expensive to purchase cotton yarn and fabric for their textile industries as inexpensive textile imports flooded their markets, particularly from Pakistan.

These imports took the place of imported raw cotton.

With Russian and East European consumption projected to rebound, world trade is likely to grow during the next 10 years. Also, pest and disease control problems have severely constrained Pakistan's ability to maintain its earlier growth rates in cotton consumption and textile exports, thus strengthening prospects for raw cotton demand by some cotton-importing textile exporters who will face less competition. Finally, several countries that were sources of cotton exports during the 1980's are expected to be growing importers instead. In past years, increasing consumption in Mexico, Brazil, and China in part represented shifts in consumption from importing countries to non-importing producers. As consumption gains have steadily out paced production in all three countries, they have begun to drive world trade higher rather than lower as in the past.

- In the traditional cotton importers (Japan, South Korea, Taiwan, and the EU) consumption is expected to decline steadily after a short pause during the mid-1990's. Strong competition from emerging Asian textile suppliers and comparative production disadvantages again accelerate declines in their raw cotton consumption after 2000.
- China is expected to raise both production and consumption, but, in the long-run, consumption is expected to grow more rapidly. China's imports have risen in the last few years and China is expected to remain a growing net importer.
- After 4 years of significantly lower cotton consumption, some Eastern European countries and the FSU are beginning to increase consumption again. Gains in consumption and imports will begin slowly and from a much lower level than historically. In most countries, cotton consumption and imports are expected to remain well below historical levels.

Exporter Developments

Foreign export growth is expected to recover during the period, but still remain below the long term trend. By 2005, foreign exports are expected to total 24.5 million bales. Foreign export growth will be supported by some resumption of trade relations between cotton-producing and noncotton-producing countries of the FSU, and by growing import demand from China and Latin America.

- Australia, the French-speaking countries of West Africa, and Paraguay will continue to channel the vast majority of their output into the export market throughout the period.

- Pakistan is expected to maintain some regulation of raw cotton exports, favoring domestic producers of products for export over exports of raw cotton. However, restrictions on raw cotton exports are expected to be less severe than in the past, leading to some growth in raw cotton exports, as well as some strengthening of domestic producer and consumer prices during 1996-2005.
- India, with much potential for yield improvement, is expected to raise exports moderately. However, as with Pakistan, India's export growth will be limited by strong growth in domestic consumption, and in exports of yarns, cloth, and garments.

WORLD COTTON CROP PROSPECTS FOR 1996/97**R. John Anderson****Managing Director - Cotton Outlook**

It is both a pleasure and a privilege to be here with you this morning. It is nonetheless a rather daunting experience since I am neither an economist nor a clairvoyant, with the result that I am poorly equipped to contribute to your deliberations on prospects for global raw cotton production during the season that lies ahead. I am, however, instructed by Mr. Barlowe to try, and try I shall.

As some of you may know, one of my company's major preoccupations is to monitor international cotton prices that go into the compilation of our Cotlook 'A' and 'B' Indices. In that task we are privileged to enjoy a huge amount of support from Sellers and Buyers alike around the world. We publicly acknowledge that the process of determining our Indices on a daily basis is a subjective one. We would also concede that the running and management of the Indices is not a job for the faint-hearted, because whatever we do is variously deemed as positive, negative, or wrong. But having no direct trading interest in cotton, we endeavour to keep a steady hand on the rudder in the choppy, and occasionally stormy, conditions in which we sail.

We do not predict cotton prices (we leave that dangerous task to others), but we do regularly embark upon perhaps the equally hazardous pastime of crop forecasting.

Such are the many unknowns, that commitment is onerous enough when one is closely monitoring weather and crop conditions together with harvesting and ginning data. But at this time of the year, when nothing is really happening, and when planting intentions are at best tentative, and at worst, secretive, the forecaster's annual urge to look ahead is, I submit, either borne of conceit or stupidity, since outrageous assumptions inevitably have to be made and quantified if a measured and credible thesis is to result.

As far as Cotton Outlook is concerned, those assumptions were still being debated and refined as I left for Washington, and the detailed product of our

labours, which is only just to hand, effectively represents our initial construction and perception of what might be considered reasonable.

But what is the basis of that “reasonable” view and what was the rationale that went into its development?

Familiar and obvious considerations such as weather conditions, yield prospects, competing crop price relationships, availability of agricultural finance, varietal development, long staples versus uplands, physiological infrastructure, ginning capacity, water supply and political intention and commitment, of course preoccupy us all, and as with my earlier remarks about prices, all are capable of different treatment in the subjective process of developing an acceptable, if not necessarily pleasing, image in the mystical crystal ball that attracts our gaze.

Such headings as I have just mentioned may give us scope for further discussion shortly, though time does not permit any diversion now.

But let us for a moment, reflect on the potential for change in the major North and Equatorial Belt producing countries and let us then go on to guess what might happen in the Southern Hemisphere.

I am surrounded by experts on the U.S. situation and as a foreigner I shall immediately defer to their superiority. However, before I do so, I might in passing just suggest that there may well be substance in the belief that uncertainty over farm legislation might temper enthusiasm for cotton and, in some areas, might divert rather more attention to grains. In contrast, we feel that there is potential for Mexico to expand sowing in her irrigated coastal states of Sinaloa and Sonora, but see little scope for change in Central America.

The outlook for the crops in the main Mediterranean growing countries (notably Turkey and Greece) appears to us to be little changed. However, a sharp recovery in plantings already seems highly probable in Spain following the breaking of the prolonged drought and the marked recovery of water levels in the major reservoirs of the Guadalquivir Basin, which implies the timely allocation of adequate supplies of irrigation water to farmers.

Our approach to the situation in China is invariably attended by caution as we, like others, attempt to place a considered construction upon the data, the rumours, and the rhetoric with regard to the country’s perceived “net trade” position that comes West during each season. This afternoon’s session holds out

the promise of further enlightenment.

Cotton production on the Indian sub-continent is, of course, synonymous with the Monsoon. In both Pakistan and India the commitment to plant is always present, bearing in mind that the potential for diversification in their respective rural economies is limited. Farmers in India may sow a little more rice and other associated cash crops, but the impact on cotton will probably be negligible if the expected slight offsetting increase in yields is achieved. Moreover, we should not forget or indeed under-estimate, the power and significance of the frequent opposing political and economic lobbies that exist in trade and industry circles of both countries.

Seed cotton production targets in the principal republics of Central Asia were largely met last year except in Turkmenistan, and assuming (in relative terms) continuing political commitment to the concept of "Free Market Economy" (whatever that means), there is, we feel, sound reason to suppose that the commitment to cotton production will remain (despite the relative paucity of farm inputs), particularly in view of the convenience of the commodity as a non-perishable dollar earner. We do, however, acknowledge that the sensible forecasting of regional lint outturns will remain much dependant upon the ability to determine representative ginning ratios with confidence.

In the Equatorial Belt, the potential to expand the area under cotton in the 'Franc Zone' countries is limited, but assuming normal summer rains, we feel that every effort will be made to exploit the available potential which is already financially profitable. Sudan and Tanzania will doubtless also strive to maintain and improve production but the availability of adequate finance will be critical to the achievement of that goal. We expect Colombia to raise new crop Interior plantings in both the Valle and Tolima.

The Southern Hemisphere new crop season is a long way off and only the most tentative of ideas can be attempted. In broad terms, however, we believe that the new season holds much promise. If Argentina and Paraguay harvest well this year, confidence may be sustained for the next. Moreover, Brazil will presumably seek to increase financial investment in agriculture with a view to restoring more realistic production levels than those presently in prospect. Moreover, the current much-improved water situation in parts of Southern Africa and Australia augurs well for the immediate future, for both plantings and yields.

The concluding issue that demands our brief attention is, of course, the

eternal and vexed question of the price/supply and demand relationship between long staple varieties and upland styles. We have all monitored this season's sad position with regard to Egyptian types and have witnessed an increased commitment to American Pima and related varieties to bridge the gap in availability of suitable supplies for the fine yarn trade. Plantings of both origins are set to expand.

Who then will call the price?

Will the farmer's financial reward be commensurate with his decision to plant more, or will the spinner's manufacturing cost base benefit significantly from the bearish implications of an excess of supply?

IS SELF-SUFFICIENCY IN THE CARDS FOR CHINA'S COTTON?

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The outlook for China's domestic cotton supply situation is for declining levels of self-sufficiency as net import levels slowly rise. Although there are a number of ways to measure self-sufficiency, the simplest is to examine net cotton trade. With net cotton imports for 6 of the last 7 years, it could be asserted that China is already less than self-sufficient. And as income and population growth increase domestic demand, in addition to the ongoing expansion in textile export demand, it will be increasingly difficult for China to more than temporarily hold off, much less reverse, the trend to rising net imports. The numerous problems China's government faces in trying to increase cotton supply, including pest infestations, low farm management and technology levels, relatively poor returns to cotton compared to other crops, and the declining profitability of many large, state-dominated textile enterprises, all suggest China's long-term cotton trade position is likely to be steadily rising net imports. In marked contrast to these problems, cotton area and production in the far northwestern province of Xinjiang has grown rapidly since the mid 1980's becoming the nation's number one cotton-producer in 1992/93 and continuing to grow. The issue for Xinjiang is whether or not that growth can continue.

PROJECTED OUTLOOK TO 2005. The outlook for China's cotton trade to the year 2005 is for gradually rising net imports (figure 1). Domestic supply is expected to increase as moderate amounts of additional area are planted to cotton (particularly in Xinjiang) and yields continue to recover from their 1992/93 low (figure 2). China's real GDP is assumed to continue to grow a rapid rate, averaging roughly 8 percent over the projection period. Increased domestic income will spur demand for cotton fabrics, while export demand for textiles, and therefore derived demand for cotton, is also expected to increase, though at a somewhat slower pace than over the previous decade.

Cotton yields are expected to see continuous moderate growth over the projection period as bollworm control efforts continue to improve yields in the North China Plain. Xinjiang is also expected to see moderate yield growth as farm management and input use improves. It is assumed that there are no major technological breakthroughs.

Real domestic producer prices are expected to continue to increase very slowly over the projection period, with cotton returns stable relative to peanuts and wheat. However, cotton returns are not expected to keep pace with the income-driven derived demand for corn and soybeans for livestock feed use. In some regions, therefore, cotton area is expected to decline under pressure from certain feed grain and oilseed crops.

Domestic cotton consumption will rise in the future, but the cross-price elasticity of demand with

respect to synthetic fibers should keep consumption growth moderate. The relative price advantage of synthetic fibers will reduce but not eliminate the impact of income and population growth on future demand for cotton. This moderate growth in demand for cotton out to 2005 keeps projected net imports from rising even more rapidly than the current estimate.

COTTON BOLLWORM. The most serious constraint to increasing cotton production in China today is probably the cotton bollworm (*Helicoverpa armigera*). First reported in China in the 1930's, it erupted into a serious infestation and became a serious constraint to cotton production when pyrethroid resistance developed in several of the North China Plain provinces most notably Shandong, Henan, and Hebei. Prior to the outbreak, these 3 provinces accounted for 52 percent of national production. Since that initial surge in infestation in 1992/93, some recovery has occurred, though 1994/95 production in these 3 provinces reached only 36 percent of national output. On average, area in these 3 provinces remains 32 percent below pre-outbreak levels. Average yield has recovered by 47 percent, but remains 17 percent below 1991/92 levels.

Other provinces that are experiencing bollworm problems include Anhui, Shanxi, Shaanxi, Hubei, and Jiangsu. These second-tier cotton producers have been impacted both in terms of area and yield, but damage has been more moderate than Shandong, Henan, and Hebei.

Government efforts to combat the bollworm have focused on use of light traps, hand picking of the insect, pheromone traps, natural enemies, and, perhaps most importantly, coordinating management efforts. Some success has followed from the coordinated community-wide application of mixtures of chemical controls across a wide cotton-growing area, as opposed to each household independently using chemicals on their small plots at different periods. This has helped to limit the moths from migrating to a neighboring field when one household chooses to treat their fields.

The work to control the outbreak of the pesticide-resistant bollworm is an ongoing effort. Although weather (a cold winter or heavy rains during the summer) can dramatically affect the severity of infestation in any given year, the creation and maintenance of a community-based control strategy is slow and difficult. Yields in the most severely affected provinces will likely recover over time, but area sown to cotton in these provinces may never recover to pre-outbreak levels. Farmers have switched to what they see as less risky but still profitable crops, such as corn, peanuts, soybeans, or vegetables. Over the long-run, central and local government attempts to increase the amount of area sown to cotton in Shandong, Henan, and Hebei will likely turn out to be only partially successful.

In addition to the cotton bollworm, cotton producers in China face ongoing problems with the cotton aphid, the spider mite, and the pink bollworm. Long-term research efforts to develop insect-resistant cotton varieties continue, but generally suffer from low funding. Although central government investment in agriculture was recently increased by roughly 25 percent, this will need to be maintained over the long haul if China wants to continue to improve yields and increase production.

MANAGEMENT AND TECHNOLOGY. Another factor increasing the likelihood of China

remaining a net cotton importer is the practice of pulling up the cotton plant prior to full maturity and subsequently picking the bolls to insure timely planting of the winter wheat crop. This practice of uprooting immature plants, followed primarily in the North China Plain, results in a substantial reduction in quality and to a lesser extent yield. From the perspective of the farmer, however, returns to planting low-quality cotton and winter wheat outweigh returns to only harvesting a higher-quality cotton. Cotton quality and yield would likely rise if shorter growing season varieties could be developed for use in the North China Plain.

Another and more widespread problem in the management and technology area is the practice of farmers retaining seeds from their own fields for up to ten years. Over the course of a decade, serious genetic degeneration occurs, resulting in a deteriorating quality and yield. The desire to retain the seeds from their own crops results in many farmers utilizing local (non-Cotton and Jute Corporation) ginneries--then delivering ginned cotton to the government procurement stations. Although seeds are returned to farmers that deliver cotton to the Cotton and Jute Corporation for ginning, it is unlikely that the seeds returned to them are their own.

If China can develop a seed program for cotton farmers, the potential for yield improvement is significant. However, the increased cost of more frequent purchases of new cotton seed is an important factor limiting the development of such a program government subsidies and education would likely be necessary in the initial stages. In spite of the potential boost to yields, farmers' reticence to change established practice and inability to bear increased seed costs, as well as central and local government budget constraints, will impede the implementation of a cotton seed program.

China's cotton yields are already relatively high by international standards, comparing favorably with other major cotton producing countries and generally higher than the world average. Research plot yields in China are significantly higher than actual farm yields, suggesting a potential for untapped yield growth. Although declining investment in agricultural research over the late 1980's through the mid 1990's may have reduced research breakthroughs, a significant number of technological and management improvements have yet to be disseminated. Meanwhile, the recent announcements of increased agricultural investment funds from the central government may initiate new increases in research yields and further expand the reservoir of yield potential.

RELATIVE RETURNS TO COTTON AND THE EMBATTLED TEXTILE INDUSTRY. The third problem for China's cotton sector is the issue of price, both upstream at the farm and downstream at the textile factory. Over the last 3 years, China's government-controlled cotton purchase price has been raised 133 percent. However, competing crop prices have also risen rapidly over the last several years, particularly for wheat, soybeans, peanuts, and corn. Heavy consumer demand for meat and edible oil, combined with the withdrawal of much of the government intervention in those commodity markets, fostered particularly rapid increases in coarse grain and oilseed crop prices.

Although the accuracy of farm income statistics in China are suspect because of very small sample size, they are nonetheless the only indicators available for relative returns for competing crops. Available statistics and anecdotal evidence suggest that

in the North China Plain and central production regions, returns to cotton and a winter wheat crop rotation are on average less than the combinations of corn and wheat, soybeans and wheat, and peanuts and wheat. The other major competing crop, vegetables, tends to be more profitable than either cotton or the other competing grain and oilseed crops (though vegetables tend to be grown closer to urban centers than cotton, reducing their direct competition for cotton area). In the east, cotton is somewhat more profitable than competing grain crops, but vegetable production is relatively more profitable and also a more direct competitor for area. In Xinjiang province, cotton competes for area primarily with grain. Until now Xinjiang's high yields have made cotton relatively profitable compared with most competing crops. However, rising demand for meat has increased feed prices dramatically, putting pressure on future relative returns to cotton.

China's textile sector is in a perilous state. The rapid rise in cotton producer prices over the last few years have reduced their profit margins dramatically. For many years, textile enterprises enjoyed the fruits of a low government-set price and a myriad of subsidies that reduced the real cost of their cotton inputs. As cotton producer prices have risen and government subsidies have been reduced, many large, inefficient state-owned textile enterprises have begun to operate at a loss. In addition, competition between firms for a share of the textile export market has driven many firms to export at a loss. The recent government announcement of a reduction in the rebate of the value-added tax for export goods will likely exacerbate the problem.

The quandary for the government is the contradiction between increasing cotton supply by having higher producer prices (and at the same time raising farm income), and the need to reduce input costs for the textile industry the provider of both much needed non-farm jobs and export earnings. While measures of financial health in China must be treated with a great deal of caution, it seems apparent that increasing numbers of textile enterprises are losing money. Purchases of cotton from the government-controlled Cotton and Jute Corporation are going unpaid for longer and longer periods. Central government efforts to improve efficiency and profitability in the textile sector, however, are constrained by the fear that the necessary layoffs, restructuring, and bankruptcies may engender social instability or unrest. The end result is that the central government will continue to funnel subsidies to large, state-run textile factories. However, central budget pressures (due in no small part to local and provincial-government resistance to the imposition of the new value-added tax system) may well reduce the size and frequency of future producer price increases for cotton.

COTTON EXPANSION IN XINJIANG. The decline in cotton area in the North China Plain over the last several years accelerated what was already a steady shift of cotton area to Xinjiang Province in China's far northwest. Cotton production in Xinjiang province is known both for its high yields and excellent quality. In the 5 years between 1989/90 and 1994/95, cotton area in Xinjiang increased more than 100 percent. The question for the future, however, is whether or not that expansion can continue, despite provincial government plans to expand cotton output by an additional 30 percent to roughly 1.5 million tons annually.

The biggest constraint to continued growth in Xinjiang cotton production is expanding irrigation and the difficulty and expense of transporting cotton to China's East Coast. Without additional

outside sources of funding, expansion of cotton area in Xinjiang may begin to slow down. The lack of investment capital to develop new irrigated lands is one of the major constraints to increasing cotton production in Xinjiang. In response, the provincial government recently implemented a program to expand cotton area by contracting with East Coast textile enterprises to jointly develop new lands in the province. Investors in those projects will receive 30 percent of output, while the Xinjiang provincial government will purchase 70 percent of output. Although some joint development projects have been undertaken, it remains unclear how much investment money this initiative will generate.

In addition to increasing cotton area, the central government also instituted a plan to transfer cotton spinning equipment from cotton-deficit regions in China's East Coast to Xinjiang. To date 400,000 spindles have been or are contracted to be moved to Xinjiang. The government plan envisages relieving the bottleneck caused by limited means of extra-province transportation and reducing shipping costs by transporting raw cotton to the yarn factories in the east. However, it will likely be equally as difficult to transport cotton yarn to the textile enterprises in the east as it would be to transport raw cotton.

The future of cotton in Xinjiang is a key factor in national production targets. It is also increasingly uncertain if the recent rapid pace of expansion can be maintained. Transportation, irrigation, and development capital constraints may reduce future growth in cotton area. Additional pressure on cotton area expansion may come from increasingly competitive coarse grain crop prices as income-driven demand for meats raises livestock feed prices.

CONCLUSION. The conclusion that China will require growing net cotton imports assumes that China's government will not reintroduce self-sufficiency as an overriding policy impetus. If the government raised cotton prices significantly, increased investment in research and new technology, fostered better management practices, insured access to reasonably priced inputs, and instituted a program promoting the replacement of seeds more frequently, China's cotton production has the potential to increase dramatically. On balance, however, this is considered unlikely given the cost to the government in subsidies and other budget outlays and the fact that significantly higher domestic cotton prices would raise production costs for a textile industry already struggling to manage declining (and in many cases nonexistent) profit margins.

A number of academic agricultural experts have called for reducing government intervention in the cotton sector. To date there is little evidence of any government support for liberalization of cotton. However, if cotton pricing and marketing were liberalized, net cotton imports would likely increase further given China's projected high domestic cotton producer price relative to projected international prices.

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IMPLICATIONS OF THE POTENTIAL NEW FARM BILL FOR UPLAND COTTON

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Policy issues confronting the U.S. cotton industry and fiber consumers are similar to those that have existed for years. The changing supply and demand forces in world markets, the protectionist policies of most countries where cotton is produced, and the vagaries of weather, insects and disease on world cotton production create considerable interactions between market forces and global policies. Safety nets on farm income resulting from policy provisions help stabilize earnings and reduce risk. As a result, capital and human resources used in growing and marketing cotton can make more orderly adjustments in or out of the cotton production infrastructure.

Significant political uncertainty regarding the new Farm Bill remained as of February 14, 1996 when this paper was prepared. The following alternatives appear most probable at this point:

- Congress passes and the President signs provisions similar to the farm sections of the Budget Reconciliation legislation the President vetoed. This agricultural reconciliation language appears to be the mark-up vehicle for the House of Representatives and the Senate and would include the transition payment concept popularly referred to as Freedom-To-Farm.
- Extend the provisions of the 1990 Farm Bill for one or two years. Upland cotton, as well as oilseeds, dairy, peanuts, sugar and honey already have this program in place. The extensions would only be necessary for wheat, feed grains, and rice.

Realistically neither of these alternatives will likely pass as written, and a compromise will define the specific provisions of the New Farm Bill (NFB). Since it appears that some version of the transition payment concept may emerge, this paper will focus primarily on analysis done by FAPRI/AFPC related to the provision of Agricultural Reconciliation Act (ARA). The analysis assumes the provisions are implemented in 1996 and extend through the 2002 crop.

Production Location and Market Share

The U.S. cotton industry has shown remarkable growth since the implementation of the marketing loan provisions from the 1985 Farm Bill in 1986. Where the use of cotton totaled roughly 12.0 million bales in the decade before 1985, usage has increased to the 18.0 million bale level by 1995. Most of the 6.0 million bale growth was in domestic mill use. However, the farm price averaged near 60.0 cents per pound during the decade before and after the 1985 cotton program. Because of improved yields, a 30 percent increase in acreage has produced enough cotton to meet the 50 percent increase in usage at essentially the same price.

Much of the expansion in cotton acreage has been in the Southeast states of Alabama, Georgia, North Carolina, South Carolina, Virginia, and Florida (Figure 1). In 1995, acreage in these states totaled 3,462,000 acres, compared with only 761,000 in 1986. The rapid growth in production has stimulated substantial investments and economic activity in the agribusiness community that provide production inputs, harvesting equipment, gins and warehouses. The Delta states of Arkansas, Louisiana, Mississippi, Missouri, and Tennessee expanded acreage by 2,268,000 acres to 4,876,000 during the last decade. Acreage in the Southwestern states of Texas and Oklahoma increased by 1,532,800 to 6,783,000. In the West, Arizona, California, and New Mexico acreage has been more stable, gaining less than 300,000 acres to 1,596,000.

The shift in cotton from West to East is clearly emphasized by changes in regional production shares since 1986. The Southeast now produces 22 percent of the crop, a sharp gain from 8 percent; the Delta's share is 34 percent, a small increase from 32 percent; the Southwest contributes 26 percent, down from 29 percent; and the West dropped from 31 percent to 18 percent share of production.

Therefore, the largest impact of the new farm program on cotton, whether positive or negative, will likely be felt in the Southeastern and Delta states. However, Texas farmers plant about 38 percent of the total U.S. cotton acreage while its production share is 26 percent. The smallest part of the industry is in the Western states. While cotton growers in the United States produced about 20 percent of the world's 89 million bale crop in 1995, American textile mills consumed only 13 percent of the 86 million bale disappearance.

New Farm Bill Provisions

Upland cotton provisions of the ARA are summarized in Table 1. The target price/deficiency income support program is replaced by fixed, annual transition payments. Upland cotton's share of the fixed payments equals 11.63 percent based on expected share of deficiency payments that would have been paid during 1996-2002 under an extension of the current program as projected by the Congressional Budget Office (CBO). Aggregate payments reach \$675 million in FY 1998 then decline to \$466 million by FY 2002.

Figure 1. United States: Cotton.

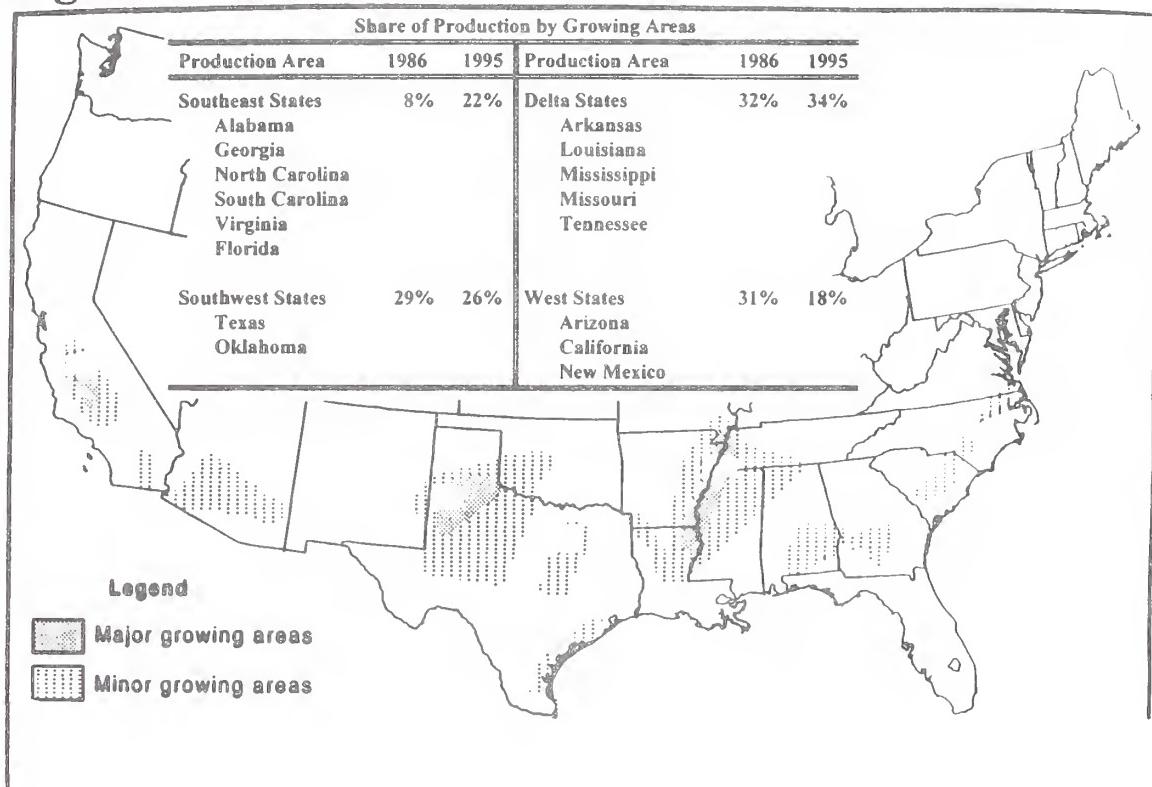


Table 1. Summary of the Upland Cotton Provisions for the 1990 Farm Bill and of the Agricultural Reconciliation Act (ARA).

Policy Tools	1990 Farm Bill	ARA
Target Price	Effectively Frozen at \$0.729/lb.	Eliminated
Decoupled Transition Payments	None	Seven year fixed annual payment contracts with declining aggregate expenditures as follows: 1996 - \$648 million 1997 - \$626 million 1998 - \$675 million 1999 - \$652 million 2000 - \$597 million 2001 - \$480 million 2002 - \$466 million
Individual Payment Quantity	85 percent of Base acres less acreage reduction requirement multiplied by farm program yield	85 percent of eligible base acreage (contract acres) multiplied by the 1995 farm program yield
Nonrecourse CCC Loan	Formula determined at not less than either the lower of 85% of 5 year olympic average or 90% of an adjusted Northern Europe Price Quotation or \$0.50/lb.	Same as 1990 Farm Bill with a maximum of \$0.5192/lb. The eight month nonrecourse loan extension is eliminated.
Marketing Loan	Based on World Market Price for Upland Cotton	Based on World Market Price for Upland Cotton
Flexibility	Limited flexibility related to 15% NFA - 10% OFA	Full flexibility on 15% of contract acreage; limited flexibility in planting vegetables and haying and grazing on 85% of contract acreage.
ARP Authority	Formula directed between 0 and 25 percent of base to achieve 29% stocks - to - use	Eliminated
CRP	36.4 million acres currently including 1.4 million acres of cotton base.	Enrollment limited to 36.4 million acres early exit is allowed.
0/50/85	50/85	Effectively 0/100
Payment Limits	\$50,000/ person deficiency \$75,000/ person marketing loan \$250,000/ person with 3 entity rule	\$40,000/ person transition \$75,000/ person marketing loan \$230,000/ person with 3 entity rule

Individual contract payments would be based on 85 percent of the eligible contract acreage multiplied by the 1995 farm program yield. To be eligible the farm must have established at least one crop base on the farm and to have participated in at least one applicable program over the 1991 through 1995 crop years. Conservation compliance regulations must be met to qualify for the fixed transition contracts.

The nonrecourse loan program is calculated as under current legislation with the exception that it is capped at \$0.5192/lb. The minimum loan floor of \$0.50/lb is retained. Extension of the nonrecourse loan beyond the original 10 month period, however, is eliminated. The marketing loan provisions are maintained as currently implemented.

The ARA significantly increases production flexibility. Eligible producers can plant any crop they choose on the 15 percent of contract acreage that is not subject to a transition payment. There are limitations on the 85 percent of contract acreage that is subject to a transition payment. Fruits and vegetables are not allowed on these acres. In addition, haying and grazing is not allowed during the five principal growing months on the payment acreage. Alfalfa plantings can exceed the 15 percent non-paid acreage, but transition payments will be reduced for plantings over 15 percent of the contract acreage.

Annual authority to require acreage reduction in order to be in compliance with the farm program is eliminated. In the current program the Secretary is instructed to utilize acreage reduction programs in order to maintain projected stocks-to-use targets of 29 percent.

Enrollment in the CRP program is capped at 36.4 million acres. Producers would be allowed to exit the program without penalty after giving a 60 day written notice. Through the first 12 sign-ups, approximately 1,434,000 acres of cotton base were idled in the CRP program. Approximately 84 percent of that base is in Texas.

The 50/85 program that allowed producers to plant as little as 50 percent of their payment acreage and receive deficiency payments on 85 of their payment acreage is eliminated. The flexibility provision of ARA effectively grant producers a 0/100 program since they would not be required to plant anything in order to receive their eligible transition payment.

Transition payments under all flexibility contracts are limited to \$40,000 per person. Marketing loan gains continue to be capped at \$75,000 per person. The three entity rule is maintained, thus total payments are capped at \$230,000 per person, down from the current \$250,000 limit.

National and Farm Level Impacts

National - FAPRI estimates, assuming normal yields, that cotton prices under ARA would fall from the mid-seventy cent per pound level currently being received for the 1995 crop to the lower-to-mid sixty cent level through the year 2000 before falling slightly under sixty cents by

2002. Couple declining market prices with a 15 percent increase in variable cost of production and per acre returns above variable cost falls by 30 percent. The decoupled transition payments will more than offset this decline in market returns on a dollar basis. However, from a cash flow standpoint if one compared market returns above variable cost plus transition payments in 1996 with comparable expected returns for the year 2002 the cash flow surplus would have declined by 19 percent.

The relative decline in returns above variable cost, whether measured with or without the decoupled transition payment results in a 15 percent reduction in planted cotton acreage from the 16.64 million acres planted in 1995. However, changes in yields, acreages and prices may reflect shifts in acreage that are different than those projected.

Farm Level - AFPC maintains data to simulate the impacts of farm policy on 72 representative crop and livestock farms nationally. Of these, 10 are dependent on cotton production for a majority of their income. Six of the ten cotton farms are located in Texas, two in the Mississippi Delta and two in the Southern San Joaquin Valley of California.

Six of the panel farms are the size considered to be representative of the majority of full-time commercial farming operations in the study area. In four of the regions, Texas Southern and Rolling Plains, Mississippi Delta and California Southern San Joaquin Valley, a second farm roughly two to three times larger than the moderate scale operation is monitored as an indication of economies of size.

All six Texas cotton farms are able to maintain real net worth over the study period. While these farm level results on average appear moderately optimistic for the Southwest region, there are some concerns. Increased production flexibility and relatively tight U.S. stocks will likely result in increased price volatility. If net cash farm income (NCFI) declines slightly, then most Texas farms experience a loss in real net worth. The large Texas Southern Plains operation could sustain a moderate NCFI decline before losing equity during the seven year period.

NCFI declines significantly on four of the representative Texas farms for most of the period as market prices decline and transition payments are reduced. The two Southern Plains farms start experiencing NCFI losses after the year 2000 while pretty much holding their own until then. The Southern Plains farms have improved their economic viability significantly over the last 2-3 years by placing a portion of their acreage under irrigation growing both cotton and peanuts. Since this is a growing trend in the Southern Plains region, a question for the future is will the water table remain sufficient or decline beyond usable levels?

The California and Mississippi operations lose real equity over the 1996-2002 study period, ranging from a small amount on the moderate California operation to over a third on the moderate Mississippi farm. A five percent improvement in NCFI relative to gross receipts, however, would allow the moderate California and large Mississippi operation to maintain equity, while roughly 10 percent would be needed on the large California and the moderate scale

Mississippi farm. As a rule of thumb, AFPC believes that if equity can be maintained with NCFI increases of 10 percent of total receipts, then the farm has a good chance of sustaining equity. This could easily be the case on the large California cotton farm where decoupling of production from payments could result in cost restructuring that was not achievable under the current payment limit and production relationships of the current program. Although the Mississippi operations will benefit from the decoupling of payments from production, the payment limits cause the moderate scale operation to be financial vulnerable.

As with the Texas farms, NCFI drops precipitously after the year 2000, a function of increasing cost, falling market prices and reduced transition payments.

Implications for Upland Cotton

The analysis raises several issues which will have to be addressed by the cotton industry as well as other sectors of U.S. agriculture. These include:

- Flexibility and reduced government support on income stability
- Structural pressure on all sectors of the cotton industry
- Regional competitiveness issues
- Landlord/Tenant negotiations and land values

Income Stability - One of the major reforms that appears to be receiving support from both parties, the administration and special interest, is the move toward greater flexibility in production decisions. While this flexibility will allow the market more latitude in directing planting decisions, it will also result in greater price risk as producers choose among alternative crops in a more uncertain economic environment.

Producers and other agribusinesses in the cotton sector will seek alternative means of reducing the increased risk exposure. Market power issues will likely become more prevalent as those with the potential to pass on risk will likely do so. Producers who have traditionally specialized in production, while somewhat insulated from downside price risk with the help of government payments, will be increasingly exposed to price swings. Improved marketing decisions will bring considerable premiums to those adept at managing price risk. The positive impacts, however, will not be universally achievable.

Many producers and agribusinesses will not have either the managerial capability or the inclination to compete in this more risky environment. Others will continue to specialize in production and turn the marketing over to others. Operating entities of sufficient size to specialize effectively in both production and marketing will do so. Many, however, are likely to turn to group marketing or cooperative efforts as a means of managing price risk.

Structural Pressure

Farmers, as well as the agribusinesses that supply them inputs and market their products, have become increasingly concentrated throughout this century. This trend will likely be enhanced under the New Farm Bill environment. As mentioned previously, decreased price and income stability will result in firms seeking to reach economies of size sufficient to internalize maximum efficiency associated with price risk reduction or vertically integrating through group activities. The bottom line is a more concentrated agriculture.

Increased flexibility at the regional level will place pressure on firms dependent on volume from a specific crop such as cotton. Shifts to grains, oilseeds or other alternative crops that prove more profitable in a single year could play havoc on agribusiness with market areas defined at regional levels, especially if single crop dependent. Cotton gins, for example, are of little use in processing and storing grains or oilseeds. Conversely elevators do not lend themselves to cotton processing in years where cotton is the markets commodity of choice.

Will there be investments in gins and elevators in this uncertain environment? The answer is yes. Will the firms likely be larger and capable of serving a larger geographical region? Again the answer is yes as a means of volume insurance. The results of this pressure is increased concentration in agribusiness. A similar story could apply to lending, input supplies, and other value-added processors as they seek to reduce the regional volume uncertainty inherent in full flexibility.

Regional Competitiveness

The panel farm discussion pointed out some areas of concern relative to regional competitiveness. The panel farm process, however, was never intended to be extrapolated to all cotton farms in the region. Therefore, regional competitiveness and flexibility opportunities are likely better addressed using ERS costs of production by region, adjusted for FAPRI/AFPC out-year estimates on revenues and cost inflation.

The flexibility issue is an interesting one for producers, lenders, other agribusinesses and economists. What will be produced in these regions if producers are given increased ability to respond to markets? At first blush analysts look at returns per acre in whole farm systems and may conclude that the farm will plant the crop that returns the most to the fixed inputs, management and risk given production constraints. Utilizing net returns per acre, cotton appears competitive with major alternative crops in the Southern Plains, Delta and Southeast. However, when returns are denominated by their cost of production, cotton falls to the bottom in each region. Low variable input crops such as wheat and soybeans prevail when per acre returns are compared to the cost of production that must be put at risk to achieve these returns. Although crude, this simplistic analysis may suggest greater movement out of cotton in the major production regions than FAPRI/AFPC anticipate. Certainly the mix within each region will

likely become more volatile each year given price expectations. This further supports the stability issues addressed earlier in the paper.

Landlord/Tenant Relationship and Land Values

If the seven year contract remains a requirement for receiving transition payments, landlords, and tenants may find themselves in unfamiliar territory relative to past negotiations. The issue centers around who is entitled to the transition payments and how is it to be distributed. Current language instructs USDA to be fair and equitable in protecting both landlords and tenants.

Since the majority of leased land in the U.S. is contracted based on single year verbal agreements, they rely on the good faith of the parties involved. The multi-year nature of the transition payment will likely change this tradition depending again on who has the right to the transition payments. To put it simply, are the transition payments attributable to land ownership or are they attributable to past operations of the land?

If the transition payment is attributable to historical operations, then land ownership in and of itself will have no role in the distribution of the payments. For example, if party A leased land from party B on a 25 percent share basis for the last five years, then under this assumption party A would have the right to 75 percent of the transition payment whether or not party A farmed party B's land in the future. The land, in this case, would only be used to construct the payment history and thus would not control the payments.

If the land controlled the transition payments, then the issue becomes more complicated given a multi-year contract requirement. A number of production and financial disagreements may evolve over the course of seven years related to how and who farms the land. It is unlikely that many landlords or tenants will want to sign seven year contracts tying them to the production of specific commodities. If this is the way the transition payments are implemented, look for considerable movements to cash leases and written contracts covering numerous contingencies.

In any event, the decoupling of transition payments, expected decline in market prices, and increased income risk will likely place downward pressure on the price of land. As a result, traditional rental agreements may need to be revised under conditions of the new farm bill.

Conclusions

Cotton policy issues focus on encouraging orderly adjustments for the agribusiness and rural community infrastructure, stability of farm income, appropriate interaction of supply and demand, and competitive prices that cover production costs for efficient operations. It is clear that the proposed provisions of the new Farm Bill will increase the flexibility of producers to respond to market signals. However, the financial risk will increase because of production and price uncertainties. The alternative grain and soybean crops will gain increased attention because

they offer reduced financial risk under favorable prices relative to cotton. The infrastructure of agribusiness and rural communities will need to adjust to cope with greater economic instability. The pressure to manage market risk internally will encourage more integration of production and marketing activities. The result will lead to a greater concentration in agricultural businesses and a possible change in the market structure for cotton. A multi-year contract on transition payments from the government will likely cause a considerable realignment in the traditional landlord/tenant relationships. Further, land values will likely weaken as farm earnings are squeezed between increasing production costs and highly variable and uncertain cotton prices.

The U.S. has the capability to expand cotton production to some 25 million bales by year 2000. But, the economic incentive must be favorable to offset the high capital outlays and resulting financial risk. The key to maintaining growth includes continued technological advances that keep production costs reasonable and below prices received. Past farm programs have assisted in providing income stability and rigorous price competition against man-made fibers and to maintain exports. Without program benefits, production may be forced to decrease to boost price. The resulting danger looms that at higher cotton prices, synthetic fibers could gain substantially in price competition. Furthermore, foreign growers with various levels of state support and low labor costs would likely claim a larger share of the international market. Hence, the U.S. cotton market would be smaller, and the industry loses to its fiber and foreign competitors.

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WILL COTTON BE KING AGAIN IN THE SOUTHEAST?

Marshall W. Grant

Things change about as fast in agriculture these days as in electronics and communications, especially with cotton. It seems every year there are genetically engineered changes that give us new varieties to meet the needs of protecting our crop and reducing our risk in production.

These changes give us opportunities to grow cotton on soils where cotton production was not practical in the past, like the high organic soils of eastern North Carolina and Virginia. Gene altering has given us cotton that is resistant to many worms which are very troublesome, and cotton which is tolerant to herbicides such as Roundup and Buctrel that control very troublesome weeds for us. As this technology is combined with more productive varieties, it will allow us to produce crops where it was not practical before.

Two things have happened in recent years that have had a dramatic impact on Southeast cotton production.

The first, and I think most important, thing to happen to cotton in the last 100 years is "Boll Weevil Eradication." This program began in North Carolina in 1978 and has reduced our cost of production by about \$70 per acre. This, of course, made cotton more attractive when compared to other crops. In North Carolina, this led to a dramatic change in cotton acreage. The acreage produced in 1978 was about 42,000 acres and trending down. The acreage in 1995 was in excess of 800,000 acres. This dramatic change is taking place in other states as the boll weevil eradication program moves across the South.

Alabama is now in the late stage of eradication. The six states in the Southeast region have gone from about 500,000 acres before eradication to about 3,500,000 acres in 1995. All indications at this point are that this acreage is permanent, in that the very expensive cost of the changes has happened; for example, the investment in cotton pickers and cotton gins has been made to the tune of an estimated \$500 million or more. Add to this the income per year from over 3 million bales of cotton, and the economy of the Southeast has to be improved. Without boll weevils we can also use longer season varieties of cotton, which means better qualities of cotton. Mills now rate Southeastern cotton quality at or above the Mid-South grown cotton. It's even good enough to replace some Western grown qualities.

The second thing that has been very positive for cotton is our decision to invest in a self-help research and promotion program which is operated through Cotton Incorporated. This has proven to be a very valuable program for cotton. We growers are very sure that our research and

promotion funds have been the reason for cotton regaining a major share of the fiber market in this country. Our share had dropped to about 30 percent of the U.S. fiber market. Today, it is above 50 percent and still growing. Our trademark is now in the top 5 percent in the U.S. consumer market as among the most recognizable.

Again, these two very innovative efforts by cotton growers have made cotton more competitive, especially in the Southeast.

Other factors are important to our long term future of U.S. cotton, such as the shortage of water for irrigation in the West, and resistance of the worm complex to pesticides in the Mid-South.

The current status of the farm bill also seems to favor cotton in the Southeast. Every indication is that peanut acreage will go down, with most of this going to cotton. It appears that more produce and fruits also are headed to Mexico. The Southeast has a freight advantage with most of America's spinners in the Southeast, and we are nearer to the large population of the Northeast. Recent legislation passed by the Senate gives cotton growers more flexibility to take advantage of these changes more quickly.

In summary, for the foreseeable future of the Southeast, cotton production is here to stay, and I believe continue to expand. The future of competing crops, corn and soybeans, does not look as good.

In the short run, cotton acreage probably will change very little in 1996 because of high grain prices, but I feel cotton prices will be better than grains in 1997 and future years, improving cotton's future in the Southeast.

We have an advantage for now, and I believe we will build on it.

1996: A CROSSROAD FOR THE WORLD GRAINS INDUSTRY

G. Denis

Executive Director, International Grains Council

Some in the grain industry have talked about a new world grain order emerging. Others have warned of an imminent food security crisis. A reputed international grain trade magazine has wondered whether some agricultural psychiatrist should be consulted to explain what is going on in world grain markets.

Wherever you may fit on that spectrum, and even if the unpredictability of mother nature makes any forecast a risky business, one thing is clear: this year, grain producers need to react to the strong market signals that global grain production should be substantially increased to meet expanding demand.

This is not just another year for the international grain industry.

Global market conditions are stronger and prices are higher than they have been for a generation, and it looks like these conditions will persist for some time. The world grain situation has moved from structural surplus to a demand led and expanding market.

The international community is nervously watching the decline in global grain stocks. This year, producers around the world must begin to rebuild stocks, within a new global trade environment with less trade distorting government incentives.

In these current tight global grain supply conditions, grains exporters will be watched closely by their customers to see whether they are prepared to let market signals work their way through without introducing new distortions to benefit domestic over foreign users.

This is the year when many agricultural policy reforms, whether or not as a result of the WTO, will begin to have full effects. A green freedom revolution may be ignited by the new USA farm legislation, adding momentum to enormous changes going on in the functioning of the international grain market, toward more privatisation, decentralisation and deregulation.

The strong market conditions should make it possible for producers to derive their incomes primarily from returns at world market prices. Producers may gradually get used to the idea that market oriented agricultural trade reforms can be made to work for their common benefit as well as to those of taxpayers, without the pessimistic impacts being realised.

1996 is the year of the FAO World Food Security Summit, amid warnings of an impending crisis in world grain supplies for developing countries. Food aid availabilities are at their lowest for 20 years, because of severe budget constraints in donor countries. The long-standing front line role

of the grain sector as the source of 80% of all food aid, and the willingness of donor governments to respond adequately to the legitimate food needs of low income developing countries, will be under close scrutiny.

This is also the first full year of implementation of the WTO agricultural trade reform programme and of the new IGC Grains Trade Convention. The IGC will have to decide on a number of membership applications, including China, representing one fifth of the world grain market.

1996 may see the grain economies of Russia and other CIS Republics, which have played such an important historical role in world grain markets, begin to reap the benefits of their painful market reforms, hopefully assisted by more favourable weather conditions. Finally, it may be a more peaceful year in terms of international relations in grains trade, perhaps even between North American producers.

Grain Market Outlook

Because uncertainty about the adequacy of global supplies has been the primary focus during the past year, attention has increasingly shifted to the outlook for production in 1996, especially for wheat. With about 70% of the crop in the ground, and a likely 2.5% increase in sowings, the IGC's preliminary production estimates suggest a world wheat crop of about 550-560 million tons.

Assuming normal growing conditions, this scale of production recovery by some 25 million tons, or slightly more than 4% over 1995, would permit a modest rebuilding of global stocks, after allowing for a small upturn in consumption.

While there is potential for output to exceed this initial projection, mother nature is jealously safeguarding its capacity to confuse forecasters, with recent concerns about the USA Hard Red Winter wheat crop a good example. This means that wheat supply and demand in 1996/97 is likely to remain delicately balanced, with the five major wheat exporters having about 5 million tons more wheat available for export than in 1995/96.

I would not volunteer any view on what the longer-term equilibrium wheat price might be, the historically (subsidised) low level being \$70 a ton in 1993 and the peak being \$230 a ton in early 1974. However, it is clear that the vital indicators of the global grain economy had been so distorted by cumulative government interventions over the last decade or so, that when the market adjustment was finally made last year, this was sudden and sharp.

How can one understand otherwise the fundamentals of the world grain situation, when wheat production had moved from the record production level set in 1990, with over 590 million tons, to only about 530 million tons last year, with the resulting decline in carryover stocks. All these changes were happening without being properly reflected in a gradual and consistent upward

movement in international prices.

The confusion of these signals was also compounded by the substantial decrease in feed consumption and production in Russia and other CIS republics. In addition, an increasing amount of grains trade has clearly been taking place in upgraded forms, such as grain fed animal products. As a result, although grains trade in recent years appeared relatively static, it is now a widely shared assessment that global grain markets have swung from structural surplus to a demand led situation for some time to come.

Global grains trade into the next century will be shaped by two other realities. Developing countries are the dominant force driving world trade, in both wheat and coarse grains; and Asia will soon account for half of all grains imports, with most of these commercial markets. There are some 120 developing countries including, for example, Indonesia with its large population, that produce little or no wheat. These account for well over one third of the world trade total. Six years ago, these countries imported 20 million tons. This year, it will be around 30 million tons. Ignoring the peaks and troughs of price-sensitive trade in feed wheat, the import growth of these countries is currently running at over 1.5 million tons annually, in line with population increases and rising per capita consumption. The financing of underlying increase in grain imports by these countries will be critical, whether this comes from the capacity of these countries to obtain adequate foreign exchange earnings or from different credit facilities.

Wheat imports by other developing countries, which this year account for a further 47 million tons of global imports, tend to fluctuate considerably, reflecting annual production levels. Large countries like India and China have demonstrated a greater than anticipated ability to raise yields, but may be approaching some serious capacity constraints. The future production potential, in these and many other developing countries, is forecast to be outpaced by rising consumption, resulting in a significant increase in world wheat trade, forecast at about 2% annually.

Much of next year's coarse grains balance sheet will depend on the next USA corn crop. At present, the very high level of domestic use in the USA and continued strong export sales will require a very large harvest to rebuild stocks in 1996/97 from this year's drastically reduced level.

Coarse grains trade is highly concentrated in Far East Asia's expanding livestock markets, including China, which is expected to continue to be a net corn importer perhaps of some 10-15 million tons by the year 2005. However, one region likely to see some considerable immediate improvement in coarse grains supplies is Southern Africa. Following last year's drought, substantially improved crops of corn and other staple foods are forecast in several countries, and this is likely to reduce their imports in 1996/97.

Future feed grain flows in countries that are exporters of both grains and meat products will be influenced by the expansion of meat trade in several large markets in Asia and elsewhere. For example, this partly explains the higher than expected corn use in the United States itself. Similarly, there is expanded processing of imported grain in several countries in Asia for export

in the form of an increasingly diverse and sophisticated range of food products, such as noodles.

As to Russia and the neighbouring Republics, which played such a large role at the time of the first world food crisis in the 1970's, a clear pattern of their new grain economies has yet to appear. The era of huge centrally-organised purchases seems to be over and a pattern of trade more sensitive to economic and transportation cost factors seems to be emerging.

Although the semi-privatised regional-based enterprises now entrusted with grain trade seem to be relatively unknown, these changes could lead, for example, to a greater penetration of Russia's Far East market and more fluid regional trade flows within the CIS. More Russian trade in the form of meat products is also discernible. The significant potential for some of the new Republics, such as Kazakhstan and Ukraine, to be major grain exporters may take some time to be realised.

Stability, Security and Liberalization

What does all this mean for market stability, food security and further trade liberalisation in the grains sector?

Market stability and food security concerns have become more visible as most of world trade, in both wheat and coarse grains, is currently conducted on the basis of minimum working stocks in major exporting countries. In these conditions, the ability of grain importers to count on dependable and competitive suppliers is one of the most tangible benefits of international grains trade, just as regular commercial customers are the most valuable assets for exporters.

At times of change, a simple but fundamental reality that has always underpinned the grain economy tends to become even more telling: some regions are able to produce grains efficiently in amounts exceeding their needs to feed themselves, while others lack such grains and need to access adequate and secure supplies from abroad.

This is why efforts to enhance market stability and world food security should be grounded in stable and open international flows of grain. This is why market signals should work their way both through the production and consumption chains, in both exporting and importing countries, and both at times of tight supply demand conditions and of softer world markets.

It is well known that, unless grain importers are allowed fair access to commercially available world food supplies, claims for maintaining high national self-sufficiency ratios for food security purposes are difficult to resist. This comes even from economies highly dependent on external trade for their overall growth and prosperity.

Achieving grains market stability objectives has never been easy to achieve. At times, legitimate food security concerns may be used as a disguise to resist more open markets. However, resisting pressures in major export countries to regulate their normal grain exports obviously

enhances market stability.

As market access barriers to grains and their products gradually come down around the world, and as the interdependence, globalization and market orientation of the international grains economy continue to increase, responding to world market stability and food security preoccupation will become even more important.

Probably nowhere is this aspect of globalizing grain markets more evident than in the Asia Pacific region where, in some cases, the import/consumption ratio for both wheat and coarse grains is well above 50%. Even in the case of China, net food self sufficiency is no longer held as being realistic. In the longer-term, if China imported up to, say, 10% of its food and feed needs, this would be equivalent to the share of the market held to-day by Japan, the world's biggest grain importer.

The present global supply-demand equilibrium is undoubtedly delicate and is somewhat at the mercy of weather. But stable trade flows, and increased production in this crop year, will help to ensure that we are not driven to a global food market crisis.

In a situation where developing countries have become the main force driving global trade in both wheat and coarse grains, a market driven food crisis, led by the needs of developing countries themselves, would unquestionably push their own short-term import bills much higher. Currently almost 90% of developing countries' needs on world markets are accessed on a commercial basis. From a grains market perspective, three factors may be essential for durable solutions to the longer-term food security of developing countries.

As consumers, developing countries need to be able to continue to obtain sufficient foreign exchange earnings on open world markets to buy the food they need, even at relatively high world prices. They need to count on the reliability of foreign food suppliers both in terms of availability and accessibility of supplies.

As producers, developing countries need a more efficient transmission of world market signals to their own farmers so as to enhance their own production potential. It seems to me that the current trade environment should more readily be translated into incentives for developing countries to become more self-reliant in food production. The disincentives to increasing agricultural production in certain countries resulting from consumption subsidies may also need closer examination.

As countries particularly sensitive to uncertainties of international markets, adequate domestic stockholding capacities should be a matter of priority. Food aid continues to be essential to respond to population needs and emergency situations, but food aid remains a short-term, complementary tool. The risk that it may, at times, discourage the longer-term expansion of local production needs to be taken into account.

In recent years, food aid has represented about 10% of developing countries grains imports.

although this ratio is much higher for some of the poorest countries. In terms of world grains trade, food aid has represented about 5% of total shipments. And the USA has almost always provided over half of it.

Although the minimum level of food aid commitments has been reduced under the latest Food Aid Convention (administered by the IGC Secretariat), the fact that they are guaranteed in tonnage rather than cash amounts is significant. This is at a time when the costs of dealing effectively with emergencies is rising and more attention is being paid to improving the quality of the aid provided.

If the present levels of world stocks have not provoked a global market crisis, I would like to think that the timely sharing of common and impartial information increasing market transparency, improved analysis of current and future grain market developments has had a steady effect. In a world market always sensitive to developments affecting the production outlook, prices, export availabilities and import requirements, increased transparency makes a vital contribution to its stability.

A greater awareness of various developments throughout the world grain industry is leading to a re-assessment of conventional assumptions about minimum safe levels of world stocks. These developments include productivity and technology improvements in the handling, transportation, marketing and use of grains. They have led to a greater fluidity of trade. In the longer-term, the effects of bio-technology will also need to be taken into account as the results of science and their public acceptability by consumers are gradually reflected in the market.

The ability of the IGC to analyse and discuss developments should be enhanced as the IGC's membership is strengthened. Several CIS Republics, China and Chinese Taipei have a major influence on the overall supply demand balance, impacting on world grains stocks in cases of unexpected needs. Put simply, for example, developments in the Chinese grain economy are hugely important for the world grain market, just as developments in the world grain market are important for China.

The disappearance of large and expensive government induced surpluses so soon into the WTO Agricultural Trade Reform Programme, should be helpful to show that domestic grains policy reforms can be initiated without the pessimistic impacts of trade liberalisation being realised. Hopefully grain market stability could be made more lasting if it better reflects basic competitive strength rather than high export subsidization and import restrictions.

Finally, it is interesting to note the role of Futures Markets in considering ways of enhancing market stability. Indeed Futures seem to have established themselves as an important barometer for the international pricing of wheat, especially in the current non-subsidised trade environment. Although Futures Markets may tend to react in a volatile fashion, reflecting the huge amount of speculative interest that they can attract at times of perceived scarcity of supply, they are increasingly used by importers as a means of covering their exposure to price changes.

Conclusion

These are indeed critical times for the world grains economy. I hope that the producers' response to the current market signals will be adequate and that reliability of supply will be maintained. Otherwise, the pessimistic assessments about the effects of global agricultural liberalisation could still feel comforted.

A significant expansion of grain production in all major grain economies, in response to the strong market signals, should also help to ensure that, in the longer-term, malthusians are not given comfort. This needs to become a win-win situation for all interests concerned, producers and consumers, exporters and importers alike.

GLOBAL PERSPECTIVES ON MEAT

Loek Boonekamp
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This paper presents trends and prospects in world meat markets to the year 2000. It provides an assessment of impacts of recent policy changes on markets and trade and the need for further policy reform. It is largely based on work carried out at the OECD in the context of its continuing effort to promote informed discussion on emerging policy issues. The projections used in this paper are based on a procedure developed by OECD in which market intelligence in Member countries and the OECD Secretariat are combined, together with information from other sources, in an economic model of OECD agriculture. The paper points out that there will be a gradual decline in the distortion in international meat markets over the medium term. But even with the Uruguay Round agreement now being implemented, much remains to be done to further liberalize international meat trade. Some of the key issues over the medium term include policy reform affecting the feed sector, a possible re-emergence of beef surpluses in the European Union and changes with respect to the sanitary status of a number of countries.

The Outlook in a nutshell

Key assumptions

The projections presented in this report are not forecasts per se. They constitute a plausible medium term future for meat markets, given a number of conditioning assumptions. These relate in particular to parameters of agricultural policies in force or announced by OECD countries and the main features of the macro economic environment.

The implementation of the Uruguay Round agreement is one of the main policy assumptions underlying the projections. For meat, they include, inter alia, the introduction of tariff quotas for beef in the United States and Canada, the reduction in import tariffs in Japan for beef and pork, the increase in minimum access commitments in Korea for beef, pork and poultry and the limits unsubsidised exports by the European Union. In this context, no unsubsidised beef exports are anticipated from the Union, so that the limits on subsidised beef exports effectively constitute a limit on total beef exports.

Under the Uruguay Round agreement, special safeguard measures exist against a rapid increase in beef and pork imports in Japan. These are triggered when cumulative imports of beef and pork are more than 17 and 19 per cent larger respectively than the amount imported during the same period of the previous year. The special safeguard measures were triggered for both meats in 1995, but this is not assumed to happen again during the remainder of this decade. Therefore, tariff rates will be reduced through to 2000 as agreed in the Uruguay Round.

The changing status regarding foot and mouth disease in Latin American countries, but also in Europe, is a development with potentially important implications for world meat trade, particularly for beef and pork. It is assumed in this outlook that sanitary requirements in importing countries will be relaxed to

recognize the regionalization principle, i.e. to allow imports of beef and pork from foot and mouth disease free zones within countries where the disease is still endemic elsewhere. However, the 'zero risk' condition, which requires that the disease is eradicated and that vaccination against it no longer occurs, is not assumed to be relaxed.

Assumptions on key macro economic indicators are important conditioning factors underlying the projections. In this respect, it is assumed that real income growth in OECD countries will average between 2.5 and 3 per cent to the year 2000 and that inflation will be kept under control at around current rates. However, real income growth in developing countries is assumed to be substantially stronger than on average during the 1980s while that in the Dynamic Asian Economies and China will continue at high levels. Finally, the US dollar is assumed to remain relatively weak against other major currencies. While keeping US meat exports price competitive, it would not facilitate unsubsidised exports from the European Union.

Although not an assumption in the strict sense, feed costs are a key element in the future development of meat markets. In this respect, the outlook suggests that while grain prices will fall from their current highs, they are likely to stay well above the average levels prevailing during the first half of this decade. This is affecting costs of production for pork and poultry more than that for beef and will tend to reduce the prices of beef relative to that of the other meats.

Main projections for beef markets

Abundant total meat supplies will affect beef prices in the Pacific region. Beef production is expected to continue to grow in the United States, Australia and New Zealand in 1996 and 1997. This is coupled with a record level of US pork production in 1996 and a sustained increase in that of poultry. The large total meat supplies are depressing US beef prices for the next few years. There has also been recently some strengthening in the US dollar exchange rate against the yen. At the same time, the recovery in Japan's economy is slow in coming about and beef export supplies from Australia are substantially increasing. All these factors are putting downward pressure on Pacific beef prices for the next few years. Measured by the price for Nebraska Choice steers, Pacific beef prices could fall to a low of about US\$ 2.30 per kg in 1997.

The decline in prices will not be enough to trigger a major run down in Pacific cattle numbers. This is also due to the fact that cereal markets are expected to have adjusted to current high prices by 1997 so that feed costs will have fallen substantially by then. With an expected recovery in Japanese income growth, continued rapid growth in other Asian countries and further improvements in market access in that area, import demand is likely to catch up gradually with the growth in supplies. As a result, Pacific beef prices are projected to start increasing again later in the 1990s, with the Nebraska Choice grade steer price recovering to US\$ 2.40 per kg in 2000. By that time, the Asian side of the Pacific Rim will be the largest beef importing region in the world, with total imports of beef more than 1.6 million tonnes. This is some 400 kt larger than the projected combined beef imports by NAFTA from third countries.

The situation on the Atlantic beef markets has been depressed for many years with growing EU beef intervention stocks in spite of subsidised beef exports of the Union reaching record levels in 1992 and 1993. However, EU beef intervention stocks are now all but eliminated, its subsidised exports will fall under the Uruguay Round agreement and restrictions on premia payments will help to stabilize its beef

production. At the same time, Argentina and Uruguay will take advantage of their access to the North American beef market under the 20 kt quotas allocated to each of them. In the context of the Mercosur trading arrangement, these countries may also ship more beef to Brasil or other partners in the arrangement. In 1995, an estimated 25 per cent of Argentine beef exports went to Chile and Brasil, which compares with about 7 per cent in 1991.

Although there would not seem to be the same source of demand strength in the Atlantic meat markets as exists in the Asian Pacific region, export supplies of beef should be more limited, in particular that of subsidised produce. Reflecting these developments, there has recently been more price strength in the Atlantic beef trade, with beef export prices from Argentina and Uruguay in 1995 about 20 per cent higher than on average during the first three years of this decade.

If there were to be renewed pressure to build up intervention stocks in the European Union, the gap between international prices in the Pacific and Atlantic beef markets would likely be further reduced. It is current EU policy not to intervene in the beef market unless market prices have fallen to a level where intervention becomes obligatory. This is the case when average EU market prices fall to less than 78 per cent of the intervention price to less than 60 per cent of that price in one Member State. That would reduce the current gap between steer beef prices in that particular Member State of the European Union and the United States from about 25 to 15 per cent. This would be less in the future, as EU intervention prices are likely to remain stable and US beef prices projected to increase again.

Main projections for pork and poultry markets

Expected high prices for feed grains and oilmeals compared to historic levels lead to slower growth in pork and poultry production in the OECD region. This is particularly so in Pacific countries, where world price fluctuations are fully reflected in domestic feed costs. Even though feed costs are likely to decline from their current high levels, the projections show that the index of feed costs will stay well above the average for 1990 to 1994 during the remaining years of the decade in North America and Oceania. The situation in the European Union and Japan is substantially different, even though grain prices rose sharply in 1995 as well. Nevertheless, because of the implementation of the final phase of CAP reform in the European Union and the substantially higher value of the yen compared to the early 1990s, feed costs are projected to remain well below their 1990 to 1994 averages in both regions.

The projected developments in feed costs will affect feeding margins for livestock producers in OECD countries. Compared to average levels in the early 1990s, margins will tend to improve in the European Union and Japan but to deteriorate in other countries. Other factors may have an impact on margins, too. For instance, increasing environmental limitations on intensive livestock farming may reduce any positive effect of generally higher feeding margins in Europe and Japan. Elsewhere, the effect of higher feed costs may be offset by continued productivity growth. That could be the case in particular in the United States, where the pork industry is going through a period of rapid structural change.

The overall impact of these developments is to reduce the growth rate of pork and poultry production in the OECD region. Compared to the 1990 to 1994 period, the average annual rate of increase in OECD pork production between 1995 and 2000 is projected to fall from more than 1 to about 0.5 per cent while for poultry it is expected to decline from close to 4 to less than 3 per cent. The decline in the rate of growth of pork and poultry production will do only little to support producer prices for these meats over

the forecast period. With lower feed costs than before CAP reform in the European Union, pork and poultry prices are likely to remain relatively low as well. Productivity gains in the US pork industry are expected to keep break-even prices for pork well below historical levels. Despite these price expectations, little growth is projected in pork consumption. Demand for poultry, on the other hand, remains very buoyant in OECD countries, and continued growth in consumption is expected despite somewhat higher prices in certain countries.

With rising incomes and a gradual but continued move towards diets which are richer in proteins, meat demand is strengthening in non-OECD countries and consumption levels for pork and poultry are increasing. Much of the increase in requirements in the non-OECD region will be met by a rise in domestic production, but imports from OECD countries are projected to increase. The bulk of the growth in non-OECD imports is likely to be supplied by larger shipments of pork and poultry from the United States. Efficiency gains in pork production and a favourable exchange rate will make US pork very price competitive in world markets and the United States will shift from a net importer to becoming a net exporter of pork. Much depends, however, on the ability of EU traders to export without the use of subsidies. The future development of relative feed costs in and outside the European Union and of the US dollar exchange rate against the ECU are important elements in this context.

Issues and uncertainties

The trends presented in this paper are a plausible outcome of world meat markets over the medium term, given the conditioning assumptions on which the projections are based. If reality were to be different than what is assumed, the outcomes would be affected as well. Some of the uncertainties related to this are analysed in the following sections.

The European Union and its beef stocks

The European Union continues to produce more beef than it needs. The situation appears to remain manageable for the next few years, with small intervention stocks and subsidised beef exports staying within the limits under the Uruguay Round agreement. In the final years of the decade, however, a combination of stagnating consumption and a small increase in production lead to a build up of stocks again. This situation is also very sensitive to small deviations in production and/or consumption from projected trends. The projections for EU beef production are based on an assumption that stricter criteria for direct income payments to beef producers will have the effect of reducing the rate of growth in the beef cow herd over the medium term. But the desired effect of reducing the substitution of beef for dairy cows, which has been prominent since the introduction of the milk quota scheme in 1984, may not or not entirely be reached. If this substitution were to continue at the same rate as prevailed since 1984, the impact on EU beef production would still be very limited. It has been estimated that the cumulative extra beef supply in 2000 under these conditions would be less than 150 kt.

The impact on the EU beef surplus of small deviations in consumption is much greater. With a small projected decline in the relative beef price over the medium term, the drop in per capita beef consumption, which has been a long term phenomenon, is expected to come to a halt. However, this assessment may be too optimistic. If beef consumption per head would continue to fall along its long term trend, and assuming that subsidised exports will be at their GATT maximum, a beef surplus of more than 800 kt would emerge in the EU market by the year 2000.

Current EU policy is for there to be no automatic intervention in the beef market when prices fall below the intervention purchase price. In the absence of intervention purchases and in view of the limitations on subsidised exports, market prices would continue to fall under those conditions. However, when market prices fall to a Union average of 78 per cent of the intervention price and to less than 60 per cent of that price in one member state, then intervention purchases become obligatory under the safety-net procedure. With such a price decline, however, the beef supply-and-demand balance in the European Union would be altered to the extent that there would be little growth in stocks during the last years of the decade.

The other effect, of course, would be that internal EU prices would be brought more in line with those in world markets. If the EU beef intervention price would remain constant at ECU 3.48 per kg, then for safety-net intervention purchases to be triggered, the market price in at least one Member State should have fallen to 60 per cent of this level, or to ECU 2.09 per kg. With an assumed exchange rate of 0.8 ECU per US dollar, this would translate in US\$2.61 per kg. That would be less than 10 per cent more than the projected price for US choice steers in 2000.

The change in foot and mouth disease status in Latin America

Two zones exist in world beef trade: the Atlantic zone, where foot and mouth disease is endemic, and the Pacific zone where this disease does not exist. Sanitary restrictions prohibit trade in other than thermo-processed beef between the two zones. Structural surpluses, triggered by support policies for beef and dairy producers have reduced international prices in the Atlantic beef trade to well below those in the Pacific. In 1994, the average fob unit value for all beef exported from Australia was more than 40 per cent higher than that of Argentina. In the same year, the fob price of Australian frozen cow beef to the United States was nearly 60 per cent higher than the average fob export price of frozen cow beef in Uruguay. To gain access to the more profitable FMD free markets, Latin American countries embarked on a programme of FMD eradication in the late 1980s. Uruguay was declared free of FMD in 1995, and vaccination against the disease no longer takes place. While there were no outbreaks in Argentina in 1995, herds are still vaccinated in all but the three southern provinces. On the other hand, outbreaks continue to be recorded in Brazil.

The Uruguay Round decisions on sanitary and phytosanitary measures included the regionalization principle, which recognizes FMD-free regions within countries where the disease is otherwise contained through vaccination. At the end of 1995, the US sanitary legislation was modified to take account of this principle. The so-called zero risk condition was maintained in the new legislation, which is to say that regions where vaccination against FMD still occurs, will not be allowed access to the US beef market. Under the new legislation, Uruguay and Argentina may ship beef against the 20 kt quota allocated to each of these two countries by the United States. Quota limitations, the zero risk condition and the small substitution rate between grain-fed and grass-fed beef are expected to limit the immediate impact of granting low-cost Latin American beef producers access to the US market. However, given the size of the price differential between beef exported from Australia and Latin American countries, these latter countries may well be in a position to export beef to the United States under the over-quota tariff rate of currently 30.3 per cent. In any case, if other Pacific importers would introduce regulations similar to the new US legislation, the implications would be more substantial. Growing low-cost Latin American beef exports would compete directly with grass-fed beef exported from Australia and New Zealand and would put downward pressure on Pacific beef prices.

Flexibility in feed demand

Policy interference in feed grain markets and structural changes in the livestock industry are affecting feed demand. The short and longer term implications are not fully transparent. In the context of an outlook for structurally lower grain stocks over the medium term, less flexible feed grain demand may have the effect of increasing volatility in feed grain prices and in feeding margins of livestock producers.

A case in point is the recently introduced tax on cereal exports in the European Union. This has the effect of withholding export supplies from world markets, driving world prices up further than otherwise would have been the case. The export tax has a direct impact on world prices, to the extent that it keeps grains in stock rather than supplying it to export markets. If stocks would have been allowed to be run down, then without the export tax, the European Union could have maintained its level of wheat and coarse grain exports in 1995/96 at the level of 1994/95. In doing so, it would have added an extra 4 million tonnes of coarse grains and 6 million tonnes of wheat to world trade. There is also a more indirect and longer term effect. Through introduction of the export tax, feed costs within the European Union will not increase to the same degree as do cereal prices on world markets. This has two implications. Firstly, it prevents adjustment of the large EU livestock sector and thus of its internal feed grain demand and export availabilities. Again, this will increase feed grain prices on world markets by more than would have been the case otherwise. Secondly, it improves the competitiveness of EU livestock production relative to those meat producers which face feed grain costs at world market prices. This will facilitate unsubsidised EU meat exports, in particular for pork and poultry.

The structural change currently underway in the US pork industry has also implications for world meat markets. Integrated systems of pork production, similar to those in the poultry industry, are increasingly taking the place of the traditional hog-corn producers. This is generating productivity gains which are expected to keep break even prices for US pork production well below historic levels. This will increase the competitiveness of US pork on international markets, but also tend to reduce its price relative to that of other meats. The market behavior of these integrated production systems is also likely to be different. Their reaction to short term price changes of feed grains will be less flexible than that of hog-corn producers, who can maximize profits (or minimize losses) by shifting relatively quickly between feeding and selling grains. The supply adjustment of these large producers to changes in pork prices will also be less than that of the sector as a whole, because their marginal costs of production are lower than the average of the sector. All these changes appear to have led to a smoother pig production cycle in the United States. However, a more pronounced cyclical pattern of production may well emerge again as the industry domination of the very large production units increases and the gap between the marginal costs of production of the most efficient producers and the industry average becomes smaller than is the case at the moment.

Concluding remarks

Some of the uncertainties related to medium term developments in world meat markets are of a largely uncontrollable nature. This is the case, for instance, with exchange rate movements or income growth rates. In a number of cases, however, the medium term outcomes can be vitally affected by policy makers or other actors in the market place. The Uruguay Round agreement does not do away with the fact that there is still a lot of policy interference in the inter-connected feed grain and livestock markets. Policy

reform towards less government interference in the functioning of these markets is only half way. The result of reform would ultimately be more efficiently functioning international markets, with a minimum of price fluctuations to the benefit of (meat) producers and consumers - both consumers of the final products as well as the livestock industry as a consumer of feed grains. It would be a very bad thing indeed if the reform train would come to a halt half way down the road. What that would achieve is to leave the world with structurally lower commodity stocks but without the required flexibility in supply and demand to cope with such a situation. It would maximize the potential for price instability in the future, penalizing producers as well as consumers.

PREPARATION FOR THE FIRST
NATIONAL CENSUS OF AGRICULTURE IN CHINA

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1. Background and General Objectives of the First National Census of Agriculture in China

In January 1994, the Chinese government decided to undertake the first national census of agriculture in 1997. This is a large survey on national conditions and strength. There are 1.2 billion people in China, among them 0.9 billion are peasants. The agriculture is the basis of national economy. Hence to develop agriculture to match the need of national economy and to improve the people's living is a primary national principle.

Because of the gradual formation of market economic system, the national decision system has more and more demanded on both the quantity and the quality of agricultural information. But the current channels for agricultural information collection can not satisfy this demand. The Chinese government decided to obtain the basic data of agriculture and rural areas to improve the decision of governments at various levels and to promote the development of agriculture, rural areas and even the national economy.

The current rural statistical system is incomplete. The systems of data processing, data convey and data keeping are also need to be improved. By means of the first national census of agriculture a statistical system which can fit the need of market economy can be set up, and the quality of regular agricultural and rural statistics can be improved, the integration of rural information in resources, indicators and standards can be realized and the system of data processing, convey and keeping may be improved.

China is a developing country. In the rural areas the economic developing levels are relatively low. Also there are difference between regions on developing levels, geological conditions and production sectors. The rural residents receive lower education.

The first national census of agriculture in China has been highlighted by the Central Government. Meanwhile it also received attention and support from international world. The international society expected that the first national census of agriculture in China will promote this activity across the world, enrich experiences and promote international exchanges. So from its stage of preparation FAO has provided strong support and will

continue to provide support in the future.

2. Design for the First National Census of Agriculture

There are five objectives for the agricultural census in China:

- a. To provide the data of stock and flow of agricultural production factors according to administrative regions.
- b. To provide the number, scale and structure of rural holdings and organizations in different sectors according to the administrative regions.
- c. To provide the characters of rural population and the data of production environment.
- d. To lay basis for setting up of new rural statistical system.
- e. To provide the sample frame for the regular surveys.

The Program of World Agricultural Census 2000 (WAC 2000) tells us that it should be cautious if we want to add the objectives of census. Considering the actual situation in China, the above five objectives are necessary and also obtainable.

Generally speaking, the agriculture in China is in its stage of transferring from traditional style to modern style. The basic characteristics of this stage are: the outline of binary economic structures of urban and rural areas still exist. The sector distribution is not well developed in the rural areas . The production is usually in small scale in the countryside. The lower price of rural labor force combines with the lower commercial rate of the agricultural products. There are very close relations among agriculture, countryside and the peasants. So for the census of agriculture in China it is difficult and also impossible to separate peasants and agriculture from rural areas. In this aspects, the censuses of agriculture in Japan, South Korea and Taiwan province of China have provided successful experiences.

Currently China is in its economic transferring stage. The governments at different levels are responsible for management and adjustment of local economic development which requires the data of the agricultural census in local levels. The local data is necessary for the local government. So it will be possible to receive support for local governments in both finance and manpower.

During the period of economic transition, there is increase in the demand of data information on agriculture. But the primary and secondary data resource channels are not well set up. This leads to the lacks of data. The census of agriculture should do it best to

satisfy the demand of data user. Meanwhile it also should help to set up a suitable, complete and internationally standardized integrated system of agricultural statistics by using of the detailed materials on the agricultural holdings obtained from the census. This system includes the integrated data resources of census and regular surveys; the integration of indicator system, definitions, concepts and standards. The forth and fifth objectives of census are designed for this system. The census should provide sample frames for current surveys of rural households, grains, forestry, fishery, special animal raising, agricultural services and township enterprises.

WCA 2000 provided specific standards on the concepts, definitions, standards, contents and methods for each member country. This is consistent with the objectives of census in China. We will do our best to ensure the consistence of program of agricultural census in China with WCA 2000.

- a. From the objectives of the census point of view, the objectives of the first Chinese National Census are extended based on the three basic objectives of the WCA 2000.
- b. From the scopes of the census point of view, the scopes of the Chinese census are extended also based on the WCA 2000, nearly covering all the proposed scopes by the world program.
- c. The international standards and requirements are also taken into consideration in terms of the definitions and standards. For example, the agricultural household which we use for the census is quite close to the concept of holding. According to the industrial classification in China, agriculture includes not only farming itself, but also forestry and fisheries. In order to make comparison with the international standards, these two industries, forestry and fisheries, are separated from the farming in the census questionnaire.
- d. The mature experience and requirements prevailed in the world for agricultural census are followed in terms of the methodology and procedures by Chinese census.

In line with five objectives of census, the main contents for the coming census are:

- a. The characteristics of rural households, non-household holdings.
- b. Rural population and personnel characteristics.
- c. Stock and flow of land in agriculture, forestry and fishery.
- d. Stock and flow of rural labor.

- e. Stock and flow of capital in agriculture, forestry and fishery.
 - f. Community environment.
 - g. Living environment of rural residents
 - h. General characteristics of non-household holdings
3. The Implementation of the First National Census of Agriculture

Implement of agricultural census need recruit thirty thousand organizers and six million field staff, so agricultural census is a large systematic engineering. In light of experience of censuses conducted in China, agricultural census will carry on under leadership of the State Council and local governments at different levels. The State Council, Provincial governments, autonomous regional governments, municipality governments, governments at prefecture level, governments at county level will set up the leadership institutes and offices for agricultural census; towns and townships will set up agricultural census office, villager committee will set up agricultural census group, which are respectively responsible for organization and concrete implementation.

Census items consists of period data and point data. The standard time of point data refers to December 31, 1996 ; the standard time of period data refers to Jan. 1 to Dec. 31, 1996. Enumeration date is from Jan. 1 to 31, 1997.

Data processing is the key to conduct agricultural census in China successfully. Since 1993, some experts and we have been studied on strategy of data processing, made choices on the whole in 1994 and improved some aspects after the pilot census in that year. According to strategy of data processing, data entry should be undertaken by 335 prefectures, data processing and tabulation should be undertaken by national and provincial levels, data tabulation includes tabulation by hand, one by sampling and one by complete. Work load for data entry is about 200 GB; 18,000 data entry operators and computer technician need to be recruited and trained; Hardware will be provided by FAO and Italian government, software will be improved on the basis of BLAISE in according with the agreement.

We will make great efforts to accomplish quality control work. Non-sampling errors may occur to all stages of census. Moreover, it is possible to appear "regional errors" in Chinese agricultural census. The pilot census in the first half of 1995 showed that how the governments of pilot counties organize census work was directly related with data quality.

In the light of the above statement, the first agricultural census in China will adopt the strong measures to reduce non-sampling errors. On reducing " stage errors", we will

enforce the following measures:

- a. We will use popular words to explain questionnaires, instruction manual, publicity materials etc., pay attention to use local and national language.
- b. We will do our best in the stage of training for field staff.
- c. We will pay attention to confirm " rural household" , especially in suburb, developed regions, border districts and areas with rare population.
- e. strengthening publicity work to obtain the collaboration of local cadres and peasants.
- d. Making out high standards on checking and accepting for questionnaires.
- f. Enforcing quality control at the stage of data processing.

On reducing " regional errors", we will enforce the following measures:

- a. Keeping different regions balanced development on organization, financial resources, and publicity etc.
- b. Enforcing checking, instruction and aid to " backward regions" on census work.
- c. Adopting suitable ways to border regions.

PRESENT SITUATION AND TRENDS OF CHINESE AGRICULTURAL DEVELOPMENT

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1. Chinese Agricultural Development in 1995

(1) Rapid Growth Obtained in Agricultural Output

In 1995, Chinese agriculture had a bumper harvest in contrast to recent years. Total agricultural value added reached RMB 1136.5 billion Yuan, approximately US \$ 136.8 billion. If calculated at comparable prices, it increased 4.5 % compared with the year before. The rapid agricultural growth improved the industrial structure of the national economy. The growth ratio of value added of two industries, industry and agriculture, was 4:1 in 1991, 5:1 in 1993 and 1994 respectively and came down to 3:1 in 1995 for the first time. It improved the imbalance in the relationship between industrial and agricultural development since the beginning of 1990s.

(2) Bumper Harvest obtained for the Main Agricultural Products

Cereal: Total production was over 410 million tons, which set a new record, and increased 5 % over the year before. The large marginal increase of cereal lessen the tension of supply and demand.

Cotton: It maintained a recovering increase with 4.5 million tons of total production in the year of 1995 which increased 160 thousand tons over the year before with growth rate as 3.7 %. It basically might meet the domestic market demand.

Oil-bearing crops: It reached 22.5 million tons in 1995 as a new record production which was the first time over 20 million tons, and increased 11 % over the year before.

Fruit crops: The total production in 1995 was estimated as 42 million tons and increased 20 % over year before.

Others: It was estimated that the sugar-bearing products could reach 78.48 million tons

with 6.8 % as increase rate over the year before, and the flue-cured tobacco could reach 2.1 million tons with 8.2 % as increase rate over the year before.

The animal husbandry and fisheries enjoyed a stable development. The whole year production of meats was 50 million tons with 11 % over the year before. Of which pork, beef and mutton production was 42 million tons with 13.7 % over the year before. Egg production was 15.72 million tons with 6.3 % over the year before. Milk production was 5.43 million tons with 2.6 % increase. Aquatic products were 25.38 million tons with a 18.4 % increase.

(3) The Main Reasons for Rapid Increases Obtained for 1995 Chinese Agriculture

- (i) Favorable price policy on agricultural products promoted agricultural development. In 1994, the national government raised the purchasing prices for main agricultural products, such as cereals and cotton, etc. by a big margin. The mixed average prices of four cereals (rice, wheat, maize and soybeans) were raised by 40 %. Based on 66.8% a increase in 1994, the cotton price was raised by 29.6 % in 1995. The purchasing prices for the main agricultural products, such as cereals and cotton, etc. which rose by a big margin, greatly promoted the development of agricultural production.
- (ii) Rapid increase in inputs. In 1995, the State increased the proportion of inputs of fixed assets, a fund within the national financial budget and credit fund for agriculture. From January to October, the State financial fund for supporting agriculture increased 20 % over the same period of the previous year. From January to November, the credit for agriculture from the national banking system was raised by over 20 %. Agricultural households are the main investment body in Chinese agriculture. Due to the big increase of prices on agricultural products in 1994, 60 % of the per capita increment of net rural farmers' income in the same year came from the changes of the prices. The raised prices stimulated the rural farmers' income expectation from the operation of agriculture, which induced the increase of inputs. In the first three quarters of 1995, farm households spent more than 45 % of inputs on farming compared with the same period of the previous year. The quantities purchased on fertilizer, pesticides and agricultural plastics were increased by 6 %, 31 % and 30 % respectively over the same period of the previous year.
- (iii) Favorable Weather Conditions. Chinese agriculture is a kind of traditional agriculture dependent on weather basically. The weather conditions were favorable in 1995. Large natural disasters did not happen in the main agricultural areas, in particular, in the cereal production zones, which laid a good foundation for the increased production.

- (iv) Real effects created by macro adjustments. Under the conditions of decreased cereal production and increased prices in 1994, aimed at ensuring the balance of supply and demand of main agricultural products, such as cereals, Chinese Government formulated an adjustment policy, i.e., "rice sack" governor responsibility system, in order to promote the local government, particularly the leaders in the economically developed areas to support agriculture according to their own reality, so that the unfavorable situation, such as outflow of agricultural resources and production factors had been preliminarily curbed. It was obvious that in some economically developed provinces continuous sliding of agricultural production in the past a few years and reduction of cereal production had been controlled. In these areas, increased inputs to agriculture and subsidy policy towards cereal production ensured the overall harvest of the main agricultural products.

2. Basic Trend of Chinese Agricultural Development in 1996

1996 is the first year of the ninth Five Year plan in China. It is essential to have a good opening on agriculture for the implementation of the Ninth Five Plan. The Chinese agricultural development faces a quite positive condition from the perspective of 1996. First of all, great importance has been attached by the Central and local governments to some of the problems which prevailed over for recent years in the process of agricultural development, i.e., one high (too high are the prices of agricultural production means), one low (too low is comparable agricultural efficiency), and one heavy (too heavy are the burdens on rural farmers). The Central Government is engaged in solving such problems as irregular market, too many levels and chaos in the sales channels of agricultural production means, in order to stabilize the prices of agricultural production means. Based on the increases in the recent past two years, the purchasing prices will be raised for cereals properly this year so that the agricultural produces could maintain reasonable comparative price relationship. The Central government has also taken some measures to reduce the burdens on rural farms. All these problems solved will create a favorable condition for the future development of agricultural production in China.

At the same time, the Central Government will also adopt an inclining policy favorable for agricultural development and intensify the support to agriculture from financial and credit aspects. Some technology adopted in agriculture, such as "Seed Engineering" will be extended. In addition, good winter sowing in the last year, not only in terms of increases of sowing areas, but also good growth of seedlings, has laid a sound foundation for a bumper harvest of summer cereals in 1996.

Generally, except for some unpredictable natural factors, the agricultural development in 1996 faces an unprecedented favorable situation. Therefore, agricultural production evidently shows a smooth growing trend. Cereal and cotton production will maintain the high level as

in 1995. The main agricultural products such as oil-bearing crops, meats, aquatic products and fruits, will continuously increase.

3. Chinese Agricultural Development Prospects and their Effects on World Market of Agricultural Products

- (1) Neither unrealistically optimistic, nor passive pessimistic views need to be held towards the Chinese agricultural development prospects.

China is a big agricultural country with a large population. The prospects of agricultural development will not only directly relate with the development and stability of the country as a whole, but also relate the trend of the world market of agricultural products. Since 1990's in particular, tension has occurred in the relation between supply and demand for main agricultural products, e.g. cereals, which caused the prices to fluctuate from time to time. Therefore, attention has been paid by the domestic and international communities towards the prospects of Chinese agricultural development. Thus, there are two different views induced:

The first point of view holds that China has already solved the feeding problem for its people, accounting for 22% of the world population and using 7 % of the world cultivated land. In particular, since the last ten years more for the reform and open policy, agriculture has experienced rapid development. The cereal production continuously reached the three points of 350 million tons, 400 million tons and 450 million tons. Other main agricultural and sideline products could be basically self-supplied. Thus the view is shared that the Chinese agricultural problem has been already solved.

The second point of view holds that as the time passes, three trends of decreasing cultivated land, growing population and increasing demand in China can not be reversed. Thus there is a doubt whether China can solve the feeding problem in the next century or not. Even more, one view is shared that when a peak of population totaling 1.6 billion reached in the year of 2030 in China, a serious gap between supply and demand of Chinese agricultural products, in particular, cereal supply and demand will occur, thus will cause the world "crisis" in food. I hold that the above-mentioned two views are based on one aspect of the problems which does not meet the Chinese situation and objective reality for agricultural development.

- (2) Many Problems and Fine Prospects Faced by Chinese Agricultural Development

Let us take cereals as an example for analysis. At present, population in China is 1.2 billion. It is irreversible that it will reach 1.3 billion at the end of this century and 1.6

billion in 2030s. As the population is growing, livelihood is improving and industrialization is progressing, the demand for food will be gradually increasing in the whole society. Based on the change of demands induced by all these aspects, Chinese Government defines that at the end of this century the target of cereal production will reach 500 million tons, and the per capita possession of cereals will be 400 kg. For the time being, the production capability is 460 million tons annually. There is still a gap of 40 million tons at the end of this century and 180 million tons in the year 2030 with the population of 1.6 billion for the balance of supply and demands of cereals. In other words, an important target for Chinese agricultural development is that 40 million tons of cereals need to be increased within five years and 180 million tons need to be increased in the next 35 years. Only thus, the balance of supply and demands for cereals could be ensured. To meet this target, there are a lot problems: (i) the increasing shortage of the cultivated land resources due to the possession of land by economic development and urban construction. (ii) less scientific and technological application in cereal production. It is quite difficult to increase cereal production as it is low of scientific and technological application and economic efficiency in cereal production. (iii) it is insufficiency of basic agricultural inputs which causes backward production conditions and incapability in anti natural disasters. (iv) small-scale operation by households as production units can not meet the demands of reducing costs, improving efficiency and approaching the market. Therefore, it is a challenge faced by Chinese Government and the people to develop agricultural production and ensure the efficient supply of agricultural products.

On the other hand, there are big potentiality and many favorable conditions to develop Chinese agriculture.

- (i) potential cultivated land resources. Firstly, One third of available cultivated land in China is with medium and low productivity (around 60 million hectares). The cereal yield per hectare of this kind of land is 2250 - 3000 kg lower than that on the land with high productivity. It may increase the yield by 1500 kg by improving the irrigation and drainage facilities and increasing the fertility on this land with medium and low productivity. Chinese Government is planning to improve 16.7 million hectares of land with medium and low productivity. It is estimated that it may increase 2.5 million tons of cereals.

Secondly, increasing multiple cropping. At present, the national agricultural average index of multiple cropping is 155 % while the highest is 246 % in Jiangxi Province. If the national index of multiple cropping could be raised 5 %, it is equal to increase 4.5 - 5.5 million hectares of sowing areas. Thus 1.8 - 2.0 million tons of cereal production could be increased. It is quite possible to raise the multiple index by 5 % based on available technology and weather conditions.

Thirdly, reclaiming reserved land resources. China has 1.47 million hectares of land which could be reclaimed out of the cultivable wasteland. At present, 200 thousand hectares of land is reclaimed annually. Based on this, 7 million hectares of land can be reclaimed till the year of 2030. Thus the cereal production can be raised by 2.5 million tons.

- (ii) potential non-cultivated land resources. China has 3.4 million hectares of cultivable wasteland, 130 million hectares of usable waste mountain and hills, 6.5 million hectares of cultivable sand land and 260 million hectares of grass land, and wide inland water surface, water surface in shallow sea and beaches. A large quantity of cereals and other agricultural products could be increased through development.
- (iii) potentiality in science and technology. At present, the scientific and technological contribution rate in agricultural growth takes around 30 %, but this rate is more than 60 % in some developed countries. China is planning to extend ten new species available and advanced production technology in the following years. Thus, 1.5 million tons of cereals could be increased annually.
- (iv) potentiality in physical inputs. It shows that growth of Chinese agriculture is more and more relying on physical inputs. As Chinese industrialization is entering its middle stage, the relationship between agriculture and industry is at the stage from agriculture providing industry with accumulation to self-supply of agriculture and industry. Therefore, compared with developed industrialized countries, the advantage of physical inputs for Chinese agricultural growth is far from development. As the national economy is developing and industrialization is expedited, the advance developed industry will surely promote agriculture. Thus a new chance will appear in the growth of Chinese agriculture.

Through the above analyses, we could have the following conclusion: the potentiality is objectively available in agricultural development in China. China could solve the problem of feeding the people, it only depends on the excavating the potentiality and putting the potential productivity into real productivity.

(3) Demands for Agricultural Products in China Will Not Threaten the World Market

- (i) The pressure of the demand for agricultural products in China on the world market is gradually lessened since the reform. Due to the decrease of cereal production in China in 1994 in addition to the continuous net exports of agricultural products in the previous two years which reduced cereal reserve, structural gap was induced in efficient supply, as well as unbalanced supply and demand. In addition, due to the affects of the macro economic environment and

the push of the cost, during that period, the price of cereals was increased with a big margin. In order to reverse that passive situation, the Chinese Government took realistic measures to urge the domestic production on one hand, and to increase imports of cereals on the other hand. The purchase of 20 million tons of cereals within one year greatly affected the world market of agricultural products.

In fact, it was the result worked out by many factors in these specific years. If we observe the ten years more of reform divided into three periods, we will find that the scale of net imports of cereals in China is gradually decreasing, its proportion to domestic production is gradually reduced. During the period from 1978 to 1984, in order to make up the accumulated gap due to the poor harvests in a long period, China imported large quantity of cereals although domestic production was increasing sharply. Imports of cereals in these six years were 89.44 million tons while exports were only 13.19 million tons. Net imports were 76.25 million tons, which accounted for 3.1 % of the domestic production in the same period. During the period from 1985 to 1990, imports were 75.64 million tons, exports 45.67 million tons, and net imports 29.97 million tons, which accounted for 1.2 % of domestic production in the same period. During the period from 1991 to 1994, imports were 41.87 million tons, exports 52.48 million tons, and net exports 10.67 million tons. Even if taking the large quantity of imports in 1995 into consideration, the net import of cereals in the five years from 1991 to 1995 were 9.15 million tons, which accounted for 0.4 % of domestic production in the same period. The above data show that the pressure of cereal demand in China on world markets since the reform not only has not increased, but also has gradually been declining.

- (ii) The Chinese economy is linking with the track of the world economy and the relationship between the Chinese market of agricultural products and world markets is also more and more close. As the restriction on agricultural resources is more and more intensified and demand for agricultural products is increased, the supply of agricultural products in China will more and more rely on the world market. But the supply and demand of agricultural products will not threaten the world market of agricultural products. According to the forecast based on the food supply and demand balance model, the total demand for cereals in China will be 510 million tons at the end of this century, and total production will be 496 million tons. The gap between supply and demand is 14 million tons, which accounts for 2.7 % of the total demand and focuses on maize which will be in sharp demand as fodder. Even if the remaining requested for maintaining the supply and demand balance is taken into consideration, annual net imports during the "Ninth Five Year Plan" period generally will not surpass the scale in 1995. Therefore, the demand for agricultural products in China will not threaten the world market in a recent period.

According to the per capita target of 400 kg of cereals per year at the beginning of next century, the demand for cereals is 640 million tons in terms of a population of 1.6 billion, which is 180 million tons less than the present production capability. According to the targets set by the Chinese Government towards the industrial policy and economic development and based on comprehensive analysis on restriction and potentiality of agricultural resources, it is quite possible to maintain 1 % of growth rate of cereal production annually in the next 35 years. The average growth rate for cereal production annually was 4 % in 40 years from 1949 to 1990. Since the reform, the growth rate has been more than 1 % annually with annual increases of production of 9.5 million tons in the whole country on average. The present achievements on cereal production in China show that China is capable of meeting domestic food demand based on self-reliance. Dependence on world markets will still be low and the world markets will not be threatened by the demand for food from China.

CHINA'S GRAIN MARKETING INFRASTRUCTURE
(emphasizing grain imports)

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Introduction

China is the world's largest grain producing and consuming country. As production reached new and higher levels in the early 1990s, researchers began to study future food and feed grain production and requirements. All of these studies concluded that demand would outstrip domestic supply, and that imports would have to be increased to meet the supply gap. Most researchers agreed that projected imports would run to tens of million tons. In August of 1994 Mr. Brown (Worldwatch Institute) captured worldwide headlines, the attention of agricultural economists, and doubtlessly grain exporters as well, when he reported that China might need to import between 200 and 400 million tons of grain by 2030.² One reaction to his pronouncement was a flurry of conferences and papers. Most scholars concluded that his projections were implausible and offered revised import estimates. There is certainly a consensus that China will need to import more grain in the future; the remaining question is how much will need to be imported.

This paper will not add to the speculation about quantities: instead it focuses on physical infrastructure issues facing grain marketing. I will attempt to address some of these constraints generally, and particularly, constraints to the marketing of imported grain. These issues have

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² Brown, Lester R., Who Will Feed China? (p.97), Norton, 1995.

received less attention than the policy, institutional, and structural constraints to grain production, marketing, and trade that various students of China's agriculture have noted.

China's "self-sufficiency" development practice meant that most grain was produced and consumed in close proximity. This minimized the need for transporting grain beyond the local market area. However, grain demand has changed due to agricultural market liberalization and increased consumer incomes. Demand has increased for wheat, high quality rice, and livestock products (i.e. derived demand for feed grain) and declined for low quality rice. But government interventions (constrained interprovincial grain transfers, quota procurement, etc.) have distorted farmer incentives (farmgate prices) and impeded supply adjustments. Furthermore, the internal rail system is operating at nearly full capacity and as a result surplus grain has accumulated in some production areas (particularly maize in the Northeast). Consequently, China now increasingly relies on international supplies to meet consumption requirements.

Grain in Domestic Trade

Annual grain production is 465 million tons (1995). About 30 percent of that, or 135 - 140 million tons, is traded domestically (beyond local markets). But trade is still dominated by the government. The State procures about 70 percent (90 - 100 million tons) of domestically marketed grain. Some of the State grain is procured and sold within the province but much of it is transported across provincial boundaries. During the first half of the 1990s less than 20 percent of grain production was marketed/transported long distances by rail and waterway and none was moved "in-bulk".

Rail represents the principal mode of grain transport. Grain traffic doubled during the past decade, increasing to 75 million tons in 1994 (Table 2). Despite this increase grain comprised only 5 percent of total rail traffic tonnage. Thus, while rail is important for grain shipment, grain is relatively unimportant to the railroads. Waterborne grain traffic represents only 2 - 3 percent of total waterborne freight traffic, (about 18 million tons by Ministry of Communication Enterprises). However, water transport is important for local grain marketing along major rivers.

Grain in International Trade (Coastal Ports)

Modern China was a net grain exporter during the 1950s, but a net importer during most of the '60s, '70s, and '80s. In 1992-94 China became an important net exporter, but again became a major net importer in 1995. Chinese ports handled maximum grain volumes during 1987-89 when throughput averaged 26 million tons. Sixteen million tons of *imports* into the coastal ports contributed the major portion of the flow. *Domestic* grain flow was divided almost equally between coastal and inland ports. Much of the imported wheat received at coastal seaports is consumed in (or near) the port city, thus requiring minimal inland transport.

Table 4 shows tonnage inflow and outflow (domestic and foreign) statistics for major coastal ports and illustrates the increasing trend in traffic for all ports. Table 6 shows total grain traffic,

both domestic and international, for all coastal and inland ports and illustrates two peak flows; one in 1988-89 during maximum wheat imports and again in 1992-93 during maximum maize exports. In 1989, grain imports comprised 21 percent of total import volume, but by 1993 they had declined to 5 percent.

Port Cargo Traffic

Grain traffic time series data by individual port are unavailable. However, 1994 survey data from 14 major ports (Table 7a) indicates that the ports of Tianjin, Dalian, Shanghai, Qingdao, and the Guangdong ports of Zhanjiang and Huangpu handled two-thirds of China's international grain imports and 80 percent of the exports. An *indication* of grain flows over time, is provided in Table 7b which contains data on cereal imports/export by customs districts for 1992-94. But many of these customs districts are inland, requiring vessel unloading/loading at coastal ports. Customs district data and port data for Dalian are compared below.

Dalian Grain Traffic Comparison

	Maize Exports		Wheat Imports	
	Customs Bureau (thousand tons)	Port Authority	Customs Bureau	Port Authority
1992	6,066	7,410	1,377	2,110
1993	8,339	8,860	1,553	2,160
1994	6,473	6,800	834	1,250

Total cargo turnover at coastal ports increased 140 percent over the 1985-94 decade. Inflow and outflow were approximately equal (table 4). Coal and petroleum products comprise half of total port turnover; other dry-bulk cargo³, of which grain is a small element, comprise another quarter of turnover. Since 1988 the cargo inflows were 60 - 65 percent domestic and 35 - 40 percent foreign. In 1987-89 annual grain inflows comprised a maximum of 7 percent of total cargo inflow and imported grain comprised almost 20 percent of all import tonnage. But, as noted earlier these flows have since declined.

Bulk cargoes are largely handled by dedicated equipment, and investments in port equipment are often cargo-specific. Indeed the two largest volume imports (iron ore and refined petroleum products) and exports (coal/coke and crude petroleum) are handled at dedicated berths and arrive in 100,000+ ton vessels. Thus, future investment in modern integrated high capacity bulk grain systems should be dedicated solely to grain. Cranes currently used to unload grain are multipurpose.

³ Dry-bulk cargoes include coal, metallic and non-metallic ores, cement, fertilizer, salt, and grain.

Port Handling Capacity

The throughput of total port tonnage essentially doubled between 1986 and 1994, while the number of seaport berths increased by 87 percent from 686 to 1282 (Table 9). Most of these berths are relatively small. At the end of 1994 there were only 359 berths capable of accommodating vessels of >10,000 tons. However, 10,000 ton vessels are relatively unimportant, and expensive, in international grain movement. More relevant to China's grain trade are berths capable of handling vessels of 35,000 to 40,000 tons which are the most common vessel size transporting China's grain imports. We don't know how many berths there are capable of accommodating vessels of this size, but the author estimates there are less than a dozen. This excludes those berths dedicated to petroleum, coal, ores, cement, timber, etc. We do know that 60,000 ton grain vessels currently berth in only one port - another such port/berth is being developed. Future efficiency will require trans-ocean shipment and berth accommodation (off-loading) of 60,000+ ton vessels.

Port Handling Technology

The lack of specialized handling and bulk intermodal facilities prevents rapid and efficient ship unloading and onward shipment and similarly contributes to inefficient loading of any domestic grain outflows. Imported grain arrives in bulk vessels (35,000 - 60,000 DWT), but only Tianjin port can accommodate the larger size vessel and only cargoes arriving at Tianjin and destined for Beijing are bulk-handled intermodally. At other ports grain is off-loaded by clam-shell crane buckets and moved by an assortment of makeshift facilities, including temporary or mobile conveyors to storage or bagging facilities; typically 6 - 7 days are required to unload 35,000 tons of grain (i.e. 5000 tons/day).

If annual grain imports of 50 million tons was the accepted requirement, port throughput of approximately 140,000 tons per day would be required. To achieve such a flow with current unloading technology (5,000 t/da), 28 ships would need to be unloaded simultaneously. If an 80 percent berth occupancy rate was acceptable (a rate that implies extensive vessel delays and high demurrage costs), a minimum of 35 berths dedicated to grain import and capable of accommodating 35,000 ton vessels would be required. This does not consider berth requirements for grain outflow - domestic or international.

If China imports a significantly larger proportion of its grain requirements, it must invest in additional infrastructure to handle it efficiently. Off-loading rates could be substantially increased with more automated bulk handling systems. Also berth numbers and occupancy rates could be decreased by developing deep-water berths which could handle 60,000+ ton vessels.

What are the Investment Implications ?

Efficient handling of internationally imported grain requires integrated logistical systems; ocean movement by panamax size vessels of 60,000+ tons, continuous high speed unloading equipment

at coastal ports, bulk intermodal transfer, and bulk unloading/handling at hinterland terminals. Therefore, the government must recognize that grain imports, during the next two-three decades, will be within a specified range of possible volumes, and plan infrastructure investment accordingly. Such planning seems to be lacking - the port authorities of Dalian, Tianjin, and Shanghai forecast (and presumably plan for) international grain imports of 6.9 million tons in 2005, a flow 50 percent greater than in 1992. It may well be that a portion of the investments in infrastructure, such as ports, will be financed from non-government sources, but regardless of the financing source, the investments should be planned.

Preliminary data suggest that over 17 million tons of grain was imported in 1995 thereby exceeding the previous record of 16 million tons. Imports at this level are obviously possible, albeit quite inefficient. The infrastructure investment necessary to import still more grain depends on which existing facilities (berths, etc.) can be converted to grain import use and which additional facilities must be built. Based on port grain handling projects currently underway, the investment cost per million tons of additional annual import capacity can range from \$20 million to convert existing 35,000-40,000 ton general cargo berths to grain berths to about \$60 million for completely new facilities that will accommodate 60,000+ ton vessels. These figures would vary considerably depending upon the ancillary investment requirements (rail lines, marshaling yards, channel dredging, etc.). If all of the incremental capacity required new construction, a \$2.4 billion investment might be needed to create import infrastructure for an additional 40 million tons of grain. This amount is trivial compared to the estimated \$302 billion China will require for transport infrastructure over the next decade.⁴

Converting existing available berths into specialized grain berths *appears* more cost effective as the investment requirements would be \$40 million less per million tons capacity. However, this option disregards the berthing space requirements for alternative cargo. Also, ocean freight would cost \$5 - 10/ton less on all grain imported via 60,000+ ton vessels (as opposed to 35,000 - 40,000 ton vessels). Thus the present value of these cost savings may more than compensate for the added investment cost - disregarding other benefits that may accrue from larger operations.

Hinterland Transport Constraints

As noted earlier, most wheat imports are consumed in coastal cities consequently inland transport -- rail and waterway -- is required for only a modest portion of the imports. However, most feed grain imports require inland transport. About 60 percent of pork, 35 percent of poultry, and 45 percent of egg output, are in inland provinces. Also some livestock production in coastal provinces is far from the seaports, thus requiring transshipment.

⁴ World Bank, Infrastructure Development in East Asia and the Pacific, 1995.

To move bulk grain intermodally, several thousand bulk hopper rail wagons would be required. If procured internationally, they could be delivered relatively quickly. But, the rail system currently operates at virtual capacity, and expanding rail wagon capacity by 40 or 50 million tons is not the only issue. Other factors must be rationalized, including: (i) the cost and time for expanding rail capacity (new lines, double tracking, and electrification) is substantial, and (ii) the demand for rail traffic in general (not just grain) is expanding more rapidly than supply capacity. In 1980, traffic density was 95 percent of design capacity on 10 percent of the key rail lines⁵. By 1990, this had increased to 40 percent - and unsatisfied demand continues to increase. (In 1990, 40 percent of rail wagon requests were denied.⁶)

Intermodal bulk grain logistical systems do not exist except for a semi-bulk rail shuttle that transports imported bulk wheat from Tianjin port to Beijing. However, such systems are under development in the Northeast (Dalian to Harbin corridor) and in the Southwest (Fangcheng to Nanning). But the capacity of these new systems are small relative to China's overall needs.

Conclusions

Grain is a relatively small element in China's domestic and international trade volume and would remain so even with expected large increases in grain imports as trade in alternative commodities will expand in parallel with economic growth. Nevertheless, grain is an exceptionally important commodity whose marketing and trade must be accorded a relatively high priority. Existing capacity could not handle increased flows *efficiently*. To handle potentially large volume increases in grain imports, over the next two decades, significant infrastructure investments must be planned (with long lead times) and implemented. This requires much more than the simple allocation of funds to generally expand port and rail capacity, but must incorporate efficient bulk handling logistical systems dedicated to grain and of sufficient capacity to minimize both operational and ocean freight costs. Further, new facilities must be located near consumption sites to minimize inland transportation requirements/costs.

⁵ World Bank, Seventh Railway Project, Report No. 13795-CHA, April 14, 1995.

⁶ World Bank, Railway Investment Study, Report No. 10375-CHA, February 1992.

Table 1: Grain Production, Procurement, and Movement

	Production (million tons)	Procurement		Waterway and Rail Traffic
		Total	State	
1984	407.3	117.2	111.7	45.2
1985	379.1	107.6	79.3	55.7
1986	391.5	115.2	94.5	58.7
1987	403.0	120.9	99.2	71.5
1988	394.1	120.0	94.8	72.9
1989	407.6	121.4	100.4	70.9
1990	446.2	140.0	95.6	72.8
1991	435.3	136.4	98.5	81.0
1992	442.7	132.5	96.6	84.2
1993	456.5		89.9	83.0
1994	445.1			93.7

Source: China Statistical Yearbook, various issues

Table 2: Rail Traffic

Year	Grain		Total	
	Volume (mil. tons)	Turnover (bil. t/km)	Volume (mil. tons)	Turnover (bil. t/km)
1984	35.87	28.36	1,212.15	723.48
1985	45.03	42.59	1,275.16	811.16
1986	46.51	42.41	1,322.19	875.01
1987	55.44	57.33	1,369.49	945.57
1988	54.64	55.54	1,405.55	986.02
1989	53.19	53.61	1,468.05	1,037.30
1990	54.32	56.55	1,462.10	1,060.12
1991	62.16	66.86	1,478.98	1,094.81
1992	64.09	71.70	1,523.17	1,154.85
1993	66.06	77.69	1,566.60	1,192.34
1994	75.48	100.99	1,571.50	1,260.68

Source: China Statistical Yearbook, various issues

Table 3: Waterway Traffic

	Prov. Trans.				
	By MOC Enterprises		Depts.	Private	Total
	Grain	All Freight	All Freight	All Freight	All Freight
(million tons)					
1984	9.32	170.82			413.47
1985	10.70	185.45	314.20	67.30	566.95
1986	12.17	206.54	317.92	232.88	757.34
1987	16.02	219.45	329.52	180.98	729.95
1988	18.26	235.27	346.46	225.78	807.51
1989	17.67	248.89	323.64	212.13	784.66
1990	18.51	251.72	287.03	168.11	706.86
1991	18.83	273.54	298.81	155.68	728.03
1992	20.12	294.87	328.69	189.43	812.99
1993	16.94	307.10			854.30
1994	18.21	318.38			

Source: China Statistical Yearbook, various issues

Table 4: Cargo Handled at Principal Seaports

	Total Turnover	Total Inflow	Foreign Imports	Total Grain Inflow	Foreign Grain Imports
(million tons)					
1980	217.3				13.4
1985	311.5	152.8		8.3	6.0
1986	379.4	184.3		12.0	7.6
1987	406.0	194.6		20.6	16.3
1988	455.9	217.4	80.6	21.3	15.3
1989	490.3	235.1	79.3	22.8	16.6
1990	483.2	223.1	74.2	18.6	13.7
1991	532.2	244.7	87.4	18.9	13.5
1992	605.4	289.9	101.9	19.3	11.8
1993	678.4	343.8	138.7	14.8	7.5
1994	743.7			9.2	9.2

Source: China Communications Yearbook, various issues

Table 5: China's Grain Trade

Year	Import (million tons)	Export (million tons)	Net Import (million tons)
1950	0.1	1.2	-1.2
1951	0.0	2.0	-2.0
1952	0.0	1.5	-1.5
1953	0.0	1.8	-1.8
1954	0.0	1.7	-1.7
1955	0.2	2.2	-2.1
1956	0.1	2.7	-2.5
1957	0.2	2.1	-1.9
1958	0.2	2.9	-2.7
1959	0.0	4.2	-4.2
1960	0.1	2.7	-2.7
1961	5.8	4.5	1.4
1962	4.9	3.9	1.0
1963	6.0	4.5	1.5
1964	6.6	1.8	4.7
1965	6.4	2.4	4.0
1966	6.4	2.9	3.6
1967	4.7	3.0	1.7
1968	4.6	2.6	2.0
1969	3.8	2.2	1.5
1970	5.4	2.1	3.2
1971	3.2	2.6	0.6
1972	4.8	2.9	1.8
1973	8.1	3.9	4.2
1974	8.1	3.6	4.5
1975	3.7	2.8	0.9
1976	2.4	1.8	0.6
1977	7.3	1.7	5.7
1978	8.8	1.9	7.0
1979	12.4	1.7	10.7
1980	13.4	1.6	11.8
1981	14.5	1.0	13.5
1982	16.2	0.8	15.3
1983	13.5	1.1	12.4
1984	10.4	3.2	7.2
1985	6.0	9.3	-3.3
1986	7.7	9.4	-1.7
1987	16.3	7.4	8.9
1988	15.3	7.2	8.2
1989	16.6	6.6	10.0
1990	13.7	5.8	7.9
1991	13.5	10.9	2.6
1992	11.8	13.6	-1.9
1993	7.5	15.4	-7.8
1994	9.2	13.5	-4.3

Sources: *China Trade and Price Statistics, 1987*
China Statistical Yearbook, various iss

Table 6:

Grain Traffic by Port Type

	Inflow			Outflow			Total Grain Traffic
	Domestic	Foreign	Total	Domestic	Foreign	Total	
(million tons)							
Coastal Ports							
1981	2.33	14.44	16.77	3.12	1.30	4.42	21.19
1982	2.21	15.48	17.69	3.82	1.12	4.94	22.63
1983	2.06	13.18	15.24	2.88	1.30	4.18	19.42
1984	2.63	10.15	12.78	3.66	2.83	6.49	19.27
1985	2.35	5.97	8.32	2.65	7.91	10.56	18.88
1986	4.45	7.55	12.00	4.43	8.85	13.28	25.28
1987	4.34	16.29	20.63	5.61	6.49	12.10	32.73
1988	6.01	15.33	21.34	6.70	7.17	13.87	35.21
1989	6.19	16.58	22.77	6.74	6.56	13.30	36.07
1990	4.92	13.72	18.64	5.16	5.83	10.99	29.63
1991	5.43	13.45	18.88	7.78	10.86	18.64	37.52
1992	7.53	11.75	19.28	8.19	13.64	21.83	41.11
1993	7.29	7.52	14.81	6.33	15.35	21.68	36.49
1994		9.20	9.20		13.46	13.46	22.66
Inland Ports							
1985							
1986							
1987	5,050			2,470			7,520
1988	3,780			2,260			6,040
1989	4,690			2,160			6,850
1990	4,710			2,220			6,940
1991	5,170			2,500			7,670
1992	4,980			2,540			7,530
1993	3,400			2,270			5,670
1994							

Sources: 1981-87: Ministry of Communication, private inquiry

1988 - date: China Commerce Yearbooks, various issues

Note: Prior to 1987, international export statistics quoted by the Ministry of Communication differed marginally from that reported by the Customs Bureau.

Table 7a **Grain Throughput of Major Ports, 1994**

Port	Throughput		Outflow		Inflow	
	Total	Foreign	Domestic	Foreign	Domestic	Foreign
(1,000 tons)						
Dalian	10,141	8,055	2,036	6,804	49	1252
Qinhuangda	2,421	1,621	800	1,285	0	336
Tianjin	578	2,630	80	1,034	3	1595
Qingdao	578	460	117	147	0	314
Yantai	308	279	22	63	6	217
Shanghai	4,375	1,733	1,332	573	1,310	1160
Lianyundao	1,138	966	169	177	4	789
Zhangjiagan	653	257	185	162	211	95
Nantong	172	81	41	29	50	52
Ningbo	985	585	337	11	63	574
Xiamen	890	604	93	3	193	601
Zhanjiang	1,159	782	179	25	198	757
Huangpu	4,742	1,171	1,660	24	1,912	1146
Fangcheng	379	363	6	-	10	363
Total	28,519	19,587	7,057	10,337	4,009	9,251
Bureau of Customs - Total				11,040		9,040

Source: Survey of individual ports.

Table 7b:

Grain Trade by Customs Districts, 1992-94

	1992	1993	1994	1992	1993	1994	1992	1993	1994
	(thousand tons)								
Imports									
<u>Wheat</u>								<u>Rice</u>	<u>Maize</u>
Tianjin	1,537.9	919.1	1,368.7	0.5	6.0	1.6			
Shijiazhuang	550.5	109.0	261.2						
Manzhouli	1.3								
Dalian	1,377.0	1,552.6	834.4	2.1		8.0			
Changchun				2.8	0.2	1.4			
Shanghai	1,641.3	651.6	964.4	0.9	1.4	8.3			
Nanjing	1,562.2	598.6	678.4	0.1					
Hangzhou	554.4	377.8	542.5	3.0	2.0	35.0			
Xiamen	564.9	376.8	566.3	0.4	0.3	0.7			
Qingdao	720.0	257.1	211.4						
Guangzhou				40.5	53.0	166.8			
Huangpu	887.7	763.5	857.0	8.6	11.8	44.9			
Jiulong	5.0	67.3	62.3	35.0	17.7	73.1			
Gongbei	0.0	1.1		7.8	1.2	4.7			
Shantou				0.2	0.5	17.6			
Halkou				0.1	0.2	50.1			
Zhanjiang	699.2	539.8	698.0			59.6			
Jiangmen						1.0			
Nanning	459.5	209.6	254.5		1.7	39.8			
Chengdu				0.3					
Kunming				1.0	0.2	0.3			
Xian				0.1					
TOTAL	10,581.3	6,423.9	7,299.3	103.6	96.3	513.8	0.1	0.3	0.6
Exports									
<u>Wheat</u>								<u>Rice</u>	<u>Maize</u>
Tianjin			0.5	20.7	18.7	74.1	477.5	132.1	68.6
Shijiazhuang	13.0		42.7			9.8	1,740.4	1,601.2	1,088.7
Manzhouli	0.3			11.0	20.0	3.6	288.8	233.9	108.6
Hohhot			0.1	3.8	27.1	0.1			0.1
Shenyang			11.0			34.0	22.1	328.5	396.4
Dalian	12.0		47.4	94.6	52.0	607.8	6,066.0	8,339.2	6,473.6
Changchun			3.0	0.1	12.6	0.7	226.2	186.9	117.7
Harbin				5.6	8.9	1.1	103.4	25.8	26.2
Shanghai				427.8	640.3	488.4			
Nanjing	20.0			163.5	471.9	251.6	261.6	10.0	47.0
Qingdao	39.2					0.1	948.6	231.8	412.6
Guangzhou				31.8	37.3	20.8			
Huangpu				169.2	110.2	3.9			
Jiulong				5.1	6.9	5.8	4.4	7.0	0.6
Zhanjiang	0.3								0.7
Jiangmen	2.4	2.1	2.0						0.1
Nanning				18.0	15.4	14.9			
Kunming			0.2	0.9	2.3	2.0			
Urumqi			0.4	1.2	8.2	0.6	201.2	0.3	
TOTAL	2.7	86.9	107.1	953.4	1,432.2	1,519.3	10,340.2	11,097.3	8,740.0
Net Exports	-10,578.6	-6,337.0	-7,192.2	849.8	1,336.9	1,005.4	10,340.0	11,097.0	8,739.4

Source: Bureau of Customs (direct communication)

Table 8:

Coastal Port Traffic

Port	1988	1989	1990	1991	1992	1993
(1,000 t)						
Dalian	48,530	50,920	49,530	54,720	60,090	59,590
Imports	7,700	8,620	7,720	8,160	8,390	8,850
Exports	26,810	25,950	27,130	30,140	28,340	27,040
Domestic In	2,310	3,790	3,780	3,410	5,910	5,710
Domestic Out	11,710	12,560	10,900	13,010	17,450	17,990
Yingkou	1,810	2,000	2,370	3,830	5,090	6,820
Imports	70	80	230	650	1,080	1,630
Exports	820	1,090	1,570	2,480	2,860	3,920
Domestic In	230	220	200	180	170	180
Domestic Out	690	610	370	520	980	1,090
Qinhuangdao	58,120	65,660	69,450	72,370	81,220	78,080
Imports	3,280	3,310	2,210	1,750	2,120	1,890
Exports	15,400	15,240	18,270	18,190	19,260	18,470
Domestic In	100	190	140	70	130	420
Domestic Out	39,340	48,920	50,830	52,360	59,710	57,300
Tianjin	21,090	24,370	20,630	23,780	29,290	37,200
Imports	8,720	8,870	6,830	6,980	7,990	9,510
Exports	7,950	7,610	8,870	10,240	11,200	12,630
Domestic In	1,850	2,090	1,850	1,920	2,150	2,410
Domestic Out	2,570	5,800	3,080	4,840	7,950	12,650
Yantai	7,800	7,030	6,680	8,330	11,140	11,060
Imports	2,740	2,930	3,170	3,910	3,950	3,270
Exports	600	500	1,470	2,360	2,080	1,010
Domestic In	1,570	1,290	660	550	1,960	2,740
Domestic Out	2,890	2,310	1,380	1,510	3,170	4,040
Qingdao	31,090	31,120	30,350	30,550	31,260	35,450
Imports	5,250	8,150	5,520	6,000	6,600	8,800
Exports	9,880	9,310	9,150	9,220	7,810	6,750
Domestic In	1,830	2,040	1,910	1,720	2,010	3,000
Domestic Out	14,330	13,620	13,770	13,610	14,840	16,900
Rizhao	7,400	8,410	0	10,800	12,020	13,170
Imports	70	100		90	340	530
Exports	1,140	910		2,880	2,890	2,510
Domestic In	70	120		120	100	180
Domestic Out	6,120	7,280		7,710	8,690	9,950
Lianyungang	11,140	11,260	11,370	12,130	14,590	14,170
Imports	3,550	3,800	2,610	2,420	3,210	2,450
Exports	3,350	2,820	3,630	4,570	4,080	4,280
Domestic In	220	180	330	180	150	230
Domestic Out	4,020	4,660	4,800	4,960	7,150	7,210

Table 9: Coastal Port Berths

	Capacity	
	Total	
	all sizes	>10,000 t
	(number)	
1986	686	197
1987	759	212
1988	893	226
1989	905	253
1990	967	284
1991	968	296
1992	1007	312
1993	1050	342
1994	1282	359

Source: China Statistical Yearbooks
various issues

Table 10: Major Imports and Exports (volume)

<u>Imports</u>	Iron Ore	Petroleum	Fertilizer	steel Prod.	Grain
	(million tons)				
1990	14.3	6.1	16.3	4.2	13.7
1991	18.5	10.6	18.2	3.6	13.5
1992	25.2	19.2	18.6	7.1	11.6
1993	33.0	33.0	10.2	30.2	7.3
1994	37.3	25.2	12.7	22.8	9.0
*1995	36.4	27.2	17.5	12.3	17.2

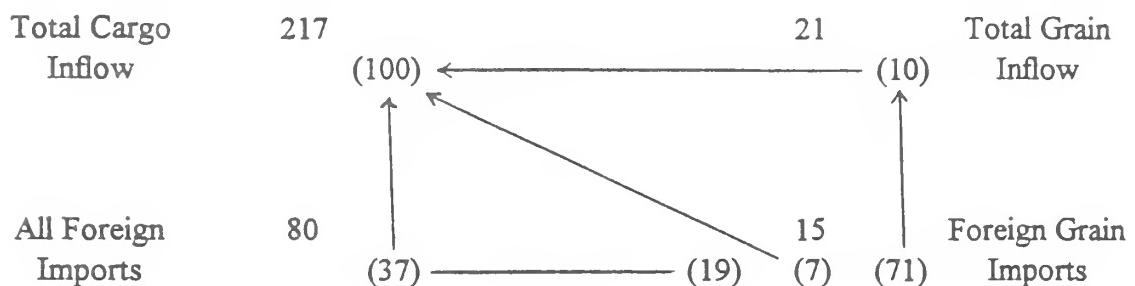
<u>Exports</u>	Coal/Coke	Petroleum	Grain
	(million tons)		
1990	18.6	29.2	5.8
1991	21.0	22.6	10.8
1992	21.1	26.9	12.0
1993	21.4	23.1	13.3
1994	28.3	22.2	11.0
*1995	32.9	20.2	0.6

* First eleven months

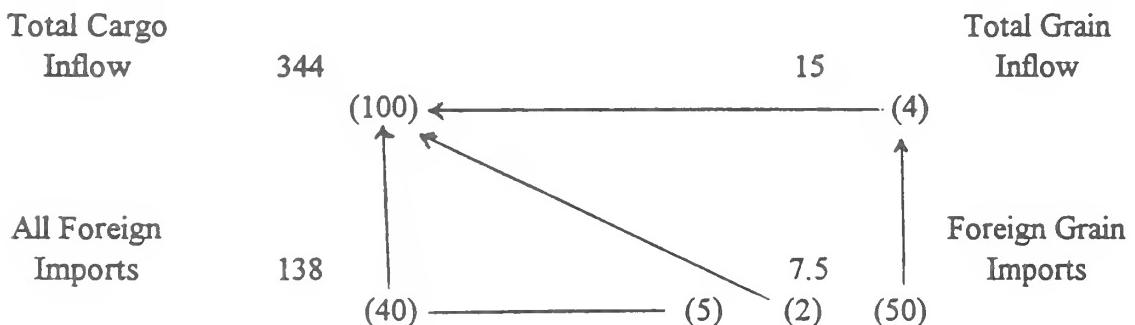
Source: China's Customs Statistics, monthly, various issues

Cargo Inflow at Coastal Ports

1988
(million tons)



1993
(million tons)



CHINA'S AGRICULTURAL PROSPECTS

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Since no one actually knows China's agricultural prospects, I feel quite bold to offer you some ideas of mine on the topic. Since her prospects are not totally determined by physical phenomena, but depend at least in part by how she reacts to those phenomena, I thought to concentrate on one aspect of government intervention in agriculture, that of investment to overcome or break physical constraints, as opposed to the usual focus on pricing and other economic policy, which probably has shorter term impacts.

To my mind, the critical physical constraints confronting Chinese agriculture over the next decade or two are, in order of priority, water, improved crop and animal germplasm, logistics, and extension of techniques to peasant farmers. Land is obviously the ultimate constraint to agricultural production, but I don't see shortages of reasonably good land, as opposed to shortages of water to irrigate that land, affecting aggregate Chinese agricultural output in the next 20 years. The four constraints mentioned are amenable to augmentation by human effort and investment. Let us look impressionistically at current Chinese investment patterns to judge whether the country is moving in the right direction, if it wishes to both maintain the well-known improving consumption patterns of its consumers, and maintain a reasonable degree of self-sufficiency.

Water shortage is, to me, a frightening prospect in China. A wide swath of China north of the Yangtze Basin and south of the Songhua Basin in northern Manchuria, and extending westwards through Inner Mongolia, Gansu and the Silk Road oases of Xinjiang, is fast approaching absolute constraints of water supply, of both surface and groundwater. Most of this area is today totally dependent on the Yellow River, which will likely reach exhaustion based on current use patterns within about five years. The Xiaolangdi Dam, now under construction with World Bank financing at the lowest feasible site before the river enters the North China Plain, will, we hope, extend this frontier by about five more years, allowing an additional million or two hectares to be irrigated in the Plain, but beyond that all seasonal surpluses will likely be claimed by cities and industries. Although several proposed upstream storage dams could further improve the water regime, none of them are being built today. We are also currently engaged in smaller works in interior basins in Gansu and Xinjiang, but again, as in the North China Plain, the sustainable limits of conjunctive use of surface and groundwater are already in sight, with millions of fertile,

flat hectares of rainfed land beyond the possible service areas. This situation is particularly discouraging since we and the Chinese working together have proven that we can triple the yields of grain crops, in short periods of time, with irrigation.

Worse yet, in some particularly dry areas like Northern Shanxi Province, the impending immediate crisis involves supply of water to major cities and coalfields of national significance. Here also, little national investment is taking place, and water is already being abstracted from irrigated agriculture, with regional declines in grain production and hence livestock production.

The obvious palliative in the medium-term is interbasin transfers, many proposed and studied for decades. China today has great difficulties in concentrating national monies on site-specific projects of national impact. The one project in the water field which does so is the famous Three Gorges Dam on the Yangtze. This project should produce enormous benefits in flood control and power production, but will have little impact on irrigation or agriculture. Unfortunately, to the Chinese Three Gorges falls in the water sector, and thus preempts other water projects across the nation, including two routes of the proposed South-North Water Transfer to carry water northwards from the Yangtze Basin to the North China Plain, as well as a smaller scheme to carry water southwards from the Songhua Basin to bone dry Liaoning Province. All in all, China is today investing too little, too late to continue irrigation expansion in its prime wheat, corn, and cotton region. This will be a major factor in the increasing grain imports everyone, including Mr. Nyberg just now, is talking about. This will not lead to famine, but it will lead to rising prices of meat and other animal products, and a marked slowdown in the rate of growth of Chinese consumption of those products.

Financing of agricultural research, the prime public good in agriculture to the Western mind, has also fallen victim to Chinese decentralization and commercialization. Most Chinese research institutes are in a perilous situation today, growing commercial crops merely to survive, or contracting to do extension based on old Chinese research results published in journals, or indeed on foreign research findings. Imports of foreign crop varieties and livestock breeds are relatively small, hampered by lack of funds, central reluctance to exchange Chinese material, and antiquated quarantine practices. These self-imposed constraints will further slow agricultural development, including the pace of improvement in the feed conversion ratio of China's herds. Recent projections by the International Food Policy Research Institute place greater sensitivity, of China's future grain deficit, on rising Chinese levels of investment in research, than on any other single factor. At this point, I, at least, see no turnaround in the financial sustenance of China's once pathbreaking research system.

Mr. Nyberg has given you some indication of China's extremely weak internal system of food logistics. This is a critical factor since it limits incentives, and hence useful production increases in regions with clear comparative advantages, whether for grain, meat, fruits, vegetables, milk, or anything else. Again, improving national logistical systems is not a task for local entities, except

perhaps through a decades-long process of trial, error, and waste. So again, the ability of the center to marshall funds and political will is the critical factor.

The final constraint is the weakened technology transmission system serving the great mass of China's farmers. Agricultural extension, I believe, is largely a public good, like research and irrigation of peasant farm areas. An inherent characteristic of public goods is weak revenue earning capacity. Given China's current emphasis on profitability considerations in public finance, it is the financing of public goods (the only goods which governments must supply) which suffers the most. Diminished investment in extension systems not only limits future production increases, but leaves current production levels open to attack. One aspect of weakened research and extension pertains to protection of intensive production from attack by pests and diseases. In recent years, we have seen very weak, pathetically underfunded responses to increasingly severe destruction of the critically important \$10 billion cotton crop, while along virtually the whole coast the \$2 billion shrimp farming industry has been decimated since 1993 to the extent that China, once the world export leader, now imports shrimp. Decentralization and reduced funding may have severely weakened China's capacity to respond to such outbreaks as effectively as she used to, though they may become more common as intensification proceeds.

In these brief remarks, I have deliberately avoided major policy issues which will be politically difficult to resolve, or mention of absolute natural resource constraints, except for water in specific places, which could be somewhat ameliorated by major civil works schemes. All of the factors mentioned are within China's capacity to handle, and involve only money, the reallocation of resources. I think China's agricultural prospects largely depend on whether she decides to devote real money to agricultural public goods.

CHALLENGES OF INTERNATIONAL TRADE FOR U.S. HORTICULTURE

by

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U.S. horticultural exports and imports are forecast at about \$10 billion in 1996. Exports go mainly to developed economies in the Northern Hemisphere, while imports come principally from Latin America and Western Europe. Over the next 10 years, challenges in U.S. horticultural trade will include technical barriers, pesticide use, commercial risks, and the U.S. dollar exchange rate in foreign markets. Horticulture's value of production is projected to increase 3-4 percent annually after 1997. The projection is based on annual increases in output (1-2 percent) and price (2 percent). U.S. domestic per capita consumption is projected to increase slightly. U.S. import volume is projected to increase 3-4 percent annually and export volume 5-6 percent. Other topics include import competition from Mexican fresh vegetables and retail price trends.

Trade is Increasingly Important to U.S. Horticulture

International demand for U.S. horticultural products is a significant factor affecting the future of U.S. horticultural producers and U.S. agriculture generally. At \$10 billion forecast for calendar-year 1996, horticultural exports account for nearly 17 percent of U.S. agricultural exports.

Foreign markets have bought a large and growing portion of U.S. fruits and vegetables in the last 5 years--up to 25 percent of U.S. fresh fruit and tree nut production and nearly 10 percent of fresh vegetables and potatoes. Just 10 years ago, exports took 20 percent of U.S. fresh fruit and tree nuts and 6 percent of fresh vegetables and potatoes. Exports accounted for about 10 percent of U.S. frozen french fries and 8 percent of processed tomatoes produced in 1995.

Annual growth in horticultural export value is projected to increase 6 to 7 percent after 1995, reaching \$17 billion in 2005. Although the 1990-94 annual rate of growth in horticultural exports averaged nearly 10 percent, the 1995 increase was down to about 5 percent. Tightened supplies from smaller 1995 fall-harvested potato and noncitrus fruit crops are likely to restrain exports during January-June 1996, but higher prices could offset lower volume.

The value of horticultural imports is projected to increase nearly 5 percent annually after 1996. This is lower than the 11-percent increase estimated for 1995 (about \$10 billion), but consistent with the 1990-94 average. Higher prices and lower production from U.S. farms, and Mexico's weakened peso during 1995, spurred U.S. demand for imports. Mexico, Chile, and other Latin

American countries and Western Europe supply 75 percent of U.S. demand for imported horticultural products.

Mexico is the main supplier of U.S. fresh vegetable imports. During the fall, winter, and spring months, Mexico and Florida supply much of the U.S. demand for tomatoes, peppers, cucumbers, eggplant, snap beans, and squash. As the peso is expected to weaken further in 1996, imports from Mexico are likely to continue at above-average rates for the short run.

Challenges for U.S. Horticultural Traders

Technical barriers to trade (TBT)--phytosanitary requirements and labeling issues, for example--are increasingly important to the horticultural industry as tariff barriers are lowered and other restrictions removed by the GATT Uruguay Round. Incidences of TBT for horticultural exports are varied. Research at USDA indicates that TBT's for horticultural exports could be costing U.S. producers \$700 million or more per year. Technical barriers to trade for horticultural products were found to be high in Japan, Korea, and China. Research is ongoing at USDA to measure the costs of TBT.

Restrictions on agricultural chemical use are also a technical issue looming before horticulture in the next 10 years. Methyl bromide is set for phaseout under the Montreal Protocol protecting the atmosphere from further ozone damage. The loss of methyl bromide will increase costs for U.S. growers and consumers of tomatoes, peppers, strawberries, cucumbers, and other horticultural crops including ornamental crops. Also, methyl bromide is an important postharvest fumigant for certain exported and imported horticultural commodities, and the phaseout is potentially damaging to California and Florida crops going to Asian markets.

Commercial risk includes meeting foreign standards of quality, labeling, packaging, and promotion. In Japan, consistent high quality is a top priority with food service buyers of canned sweet corn, for example. Rerouting exports to secondary markets may be a problem if box labels are in the wrong language. Recyclable pallets are becoming an issue for some Western European markets. And competitors in foreign markets are turning to government promotion assistance as the World Trade Organization (WTO) calls for reduced direct subsidies.

Finally, food safety standards in some foreign markets are not as well established as in the United States, and this leaves foreign inspectors with more discretion in their enforcement. Therefore, the challenge to U.S. exporters is to know the rules in those markets and reduce the chance of problems arising.

The U.S. dollar's exchange rate in foreign markets is an important factor affecting export demand. While exchange rates are outside the U.S. horticulture industry's direct influence, a weaker dollar in Japan, for example, puts U.S. exporters in a more price-competitive position in the Japanese market. Conversely, a stronger U.S. dollar encourages imports to the United States. The most notable example is the dollar against the Mexican peso in 1995. The dollar in 1995 doubled in strength against the peso, compared to 1994. And imports from Mexico surged

while U.S. fresh produce exports to Mexico halved during 1995.

The challenges to U.S. horticulture of trade developments around the world may be met partly in the set of international trade agreements of recent years. The rules of WTO and North American Free Trade Agreement (NAFTA) provide means for settling trade disputes among the signatories. The major obstacles to free trade are tariffs, quotas, and technical barriers to trade. The Uruguay Round and NAFTA call for tariffication of quotas, lower tariffs, and science-based sanitary and phytosanitary (SPS) regulations. As WTO and NAFTA force tariffs lower, SPS disputes are gaining prominence.

U.S. Exports Go To Developed Economies...

Booming exports to developed and newly developed Asian markets is the horticultural trade story thus far in the 1990's. In 1996, export value to Asia--principally Japan, Hong Kong, and Taiwan--is expected to be nearly double what it was in 1990. At \$4 billion in 1996, Asia's share of U.S. horticultural exports would be 38 percent, up from 32 percent in 1990. The share of exports to Canada and Western Europe--major markets for U.S. horticultural exports--declined from 53 percent in 1990 to an expected 45 percent in 1996

Economic growth in Japan is projected to average less than 2 percent over the next 10 years, while the rest of Asia averages 6-7 percent. China's economy is projected to increase about 8 percent annually, while other East and Southeast Asian countries grow at about 5 percent. World population growth is projected to slow in the next 10 years, from 1.6 percent in 1990-1995 to 1.4 percent in 1996-2005. In the developed economies, where most U.S. horticultural exports are sold, population growth is projected at only 0.5 percent annually.

The U.S. dollar's exchange rate in foreign markets will have an impact on whether the projected export scenario is realized. Since 1990, currencies in several Asian markets--principally Japan--have increased steadily against the U.S. dollar, while Canada's dollar weakened in most years. The relative change in exchange rates is partly behind the shift in market share toward Asia. The U.S. dollar's real rate of exchange with the Japanese yen is not expected to continue averaging 7-percent annual declines--as it has done since 1990--keeping projected export growth below recent trends.

...And Imports Come From Latin America and Western Europe

Latin America claims the largest share of U.S. horticultural imports, 50 percent of the \$10 billion in 1995. Mexico and Chile ship most of the fresh produce which is also grown in the United States. Chief examples of these include tomatoes, peppers, and other winter fresh vegetables from Mexico and grapes, apples, and plums from Chile. For bananas, the principal U.S. suppliers--with about 90 percent of the total bananas imported--are Guatemala, Honduras, and Costa Rica in Central America, and Colombia and Ecuador in South America.

Western Europe supplies about 25 percent of U.S. horticultural imports, and processed products

such as wine and other fruit juices make up about 85 percent of the total value. Cut flowers and flower bulbs account for about 10 percent and fresh produce 5 percent of the total from Western Europe. The remaining 25 percent of U.S. horticultural imports originate from Oceania (New Zealand apples, for example) and Asia (canned vegetables).

Increased Imports From Mexico...

Florida growers are concerned about the impact on domestic grower prices from increased U.S. imports of fresh vegetables from Mexico. In January 1996, the Florida State government began inspecting all foreign produce coming into the State, focusing on potential sanitary and phytosanitary violations and proper labeling on produce shipping containers. Also, Florida growers are seeking more frequent monitoring of incoming produce at the U.S.-Mexico border as a means for more timely tariff protection.

Florida growers are concerned mainly about the market for six winter fresh vegetables: tomatoes, bell peppers, cucumbers, eggplant, snap beans, and squash during October to June. The term winter fresh vegetables applies to this group because of intense competition during January to March. During the winter, Mexico's exports peak and Florida's production is concentrated in the southern part of the State, near Homestead and Immokalee.

In the late 1980's, Florida typically supplied 45-50 percent of the U.S. market (October-June) for these vegetables. Mexico supplied about 35 percent and other sources (principally California) supplied 15-20 percent. Since 1991/92, Florida's share has decreased from an unusually high 57 percent to 36 percent in 1994/95, and the 1995/96 share could decline further, while Mexico's share is up sharply. The high Florida share in 1991/92 resulted from a weather-reduced supply from Mexico.

Weather has been a significant factor affecting Florida's market share during the last 5 seasons. Just as Mexico's weather boosted Florida's share above average in 1991/92, weather reduced Florida's supply during 1994/95, beginning with damage from Tropical Storm Gordon. The 1995/96 season started late in Florida, due to cool and rainy weather. And Mexico's Baja California region shipped tomatoes through December--several weeks later than usual. The extended Baja season further weakened Florida's fall-season market.

...Related to Peso Devaluation

When Mexico devalued its currency in late December 1994, Mexican vegetable producers had an additional incentive to export winter fresh vegetables to the U.S. market. During January to June 1995, U.S. imports of the six vegetables increased 13 percent, even though much of Mexico's crop had been planted before the devaluation. Diversion from Mexico's domestic market accounted for some of the increase, while higher yields also contributed.

The weak peso continued into the current 1995/96 season, affecting both supply and demand for fruits and vegetables in Mexico. Mexico's inflation and unemployment rose and consumer

purchasing power declined. Reduced demand is a contributing factor to the 50-percent drop in U.S. exports of fresh fruits and vegetables to Mexico during 1995.

In response to sluggish domestic demand, Mexico's vegetable producers turned to the U.S. market to earn dollars. The peso's rate of exchange increased from 3 pesos per dollar in December 1994 to over 7 pesos in early 1996. In Mexico, growers are likely paying higher prices for imported inputs like seed and agricultural chemicals. The higher costs may be partially mitigating the peso effect on Mexican supply. However, the short term net effect of the peso devaluation appears to have given Mexican producers a profit advantage.

During calendar 1995, the value of Florida's winter fresh vegetable production decreased to \$700 million, down from \$1.2 billion in 1992 and \$829 million in 1994. In 1996, prices received by Florida growers for these vegetables, which account for three-fourths of Florida's fresh vegetable industry, have averaged below year-earlier levels and well below 1992. In the near term, with prospects for a continued weak peso, Florida growers are expected to continue facing stiff competition in the U.S. market for the six winter fresh vegetables.

U.S. Horticulture's Long Run Outlook

U.S. horticultural producers are likely to post 3-4 percent average annual gains in production value over the next 10 years, beginning in 1997. The forecast rate of growth combines expected increases in domestic per capita demand, U.S. population growth, increased exports, and higher grower prices. U.S. domestic demand, driven mainly by population growth and trends in per capita consumption, is projected to increase less than 2 percent per year. Exports, which account for about 15 percent of U.S. production, are projected to increase 5-6 percent per year. Grower prices are projected to follow the long run trend of about 2 percent annual increases.

In 1996, the increase in production value is expected to be smaller because of lower grower prices for fresh fruit and vegetables. During 1990 to 1994, growth in the value of horticultural production averaged 3.5 percent. And, 1995's estimated \$34.5 billion was up 6 percent because of unusually high grower prices. Weather-related supply shortages last year, coupled with strong demand for fresh produce, boosted prices and total returns above trend.

The strong demand for fresh produce forced farm prices higher in 1995, because of reduced supplies. Estimated 1995 U.S. fruit and vegetable production totaled 190 billion pounds (farm-weight basis), a drop of 2 percent from 1994. Prices, however, averaged 12 percent higher for noncitrus fruits (apples and pears, for example) and 16 percent higher for fresh vegetables. Fresh vegetable production in Florida and California was 5 percent lower due to several storms; and California's summer fruit crop was down 32 percent following a warm winter and hail in late spring. California and Florida combined to produce half of the U.S. total value of horticultural production (including greenhouse and nursery crops).

Long Run Factors Worth Watching

Several long run factors could change the forecast 3-4 percent annual growth in U.S. horticultural production value. Domestic demand could increase faster than projected, for example. The projections are based on trends since 1990, and the rate of increase in per capita consumption is lower than the 1980's rate. The trend in U.S. consumption of fresh produce is flat since 1989, when per capita consumption totaled 288 pounds (farm-weight basis). Fresh fruit and vegetable consumption in 1995, although not yet official, is likely to be down because of tighter supplies and higher prices. During 1979 to 1989, per capita consumption of fresh produce rose about 1.8 percent per year.

During the 1980's, U.S. consumers' disposable income--adjusted for inflation and population growth--increased 1.6 percent per year. But since 1990, income growth slowed to 1.3 percent, and growth after 1998 is projected to average 1.7 percent per year. However, in the next 3 years, per capita income growth is expected to decrease from 2.5 percent in 1995 to only 1.3 percent in 1998. Also, the proportion of income spent on food declined sharply, from 12 percent in 1990 to nearly 10 percent in 1995. And consumers continued to shift food spending to away-from-home outlets, diverting demand from the traditional retail produce section.

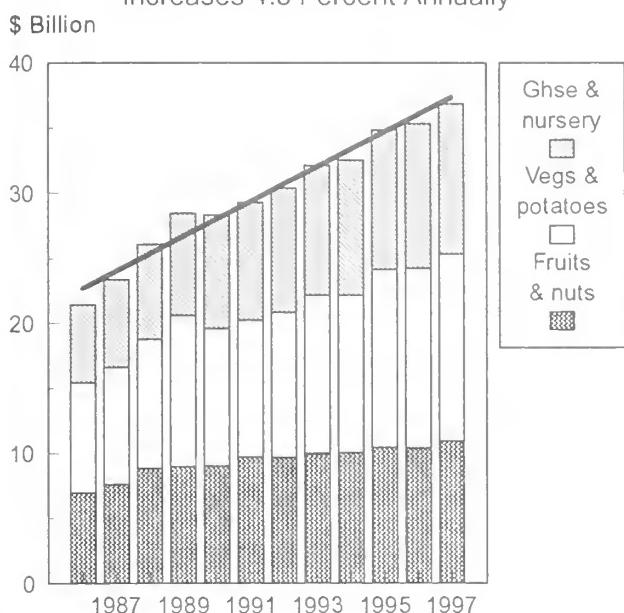
Produce Prices Outstrip Other Foods

Retail prices for horticultural products have increased at a higher rate than other foods. Annual increases in the consumer price index for fresh and processed fruits and vegetables averaged 5 percent since 1983, compared to 3 percent for all other food items. Fresh produce, averaging 6.4 percent per year, increased more than twice as fast as processed fruits and vegetables.

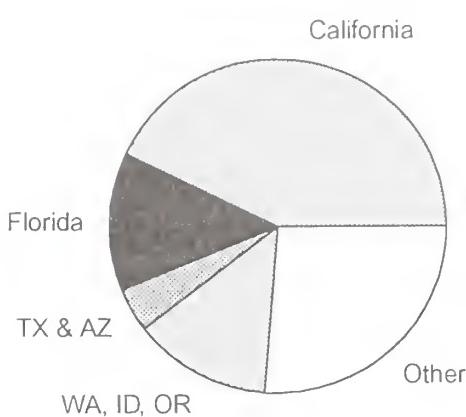
Grower prices for horticultural crops have increased since the early 1980's, but at a slower rate than retail prices. During 1983 to 1995, grower prices increased less than 2 percent per year. Weather problems--freezes in citrus areas, for example--occasionally cut supplies and boost prices on a temporary basis. But growers respond usually with increased acreage in subsequent years; and with Florida citrus, new orchard area moved farther south. Vegetable prices at the farm level, though erratic from year to year, have trended up at about 1 percent per year, incorporating the long run trend in input costs. Prices paid for agricultural chemicals--an important input for horticultural producers--actually leveled in the 1980's, before rising again at about 4 percent per year in the 1990's.

The widening gulf between grower and retail prices for fresh produce represents increased labor, transportation, and other marketing costs. Refrigeration costs, essential for most fresh produce after harvest, increased in recent years due to tighter restrictions on the use of chlorofluorocarbons as coolants. Combining fuel and driver's wages, the cost of operating trucks which haul fresh produce averaged about \$1.30 per mile in 1995, compared to \$1.13 per mile in 1983. Also, wages and benefits for labor in grocery stores generally have increased about 4 percent per year. In addition to the traditional input costs, new product development and increasing imports are raising retail prices.

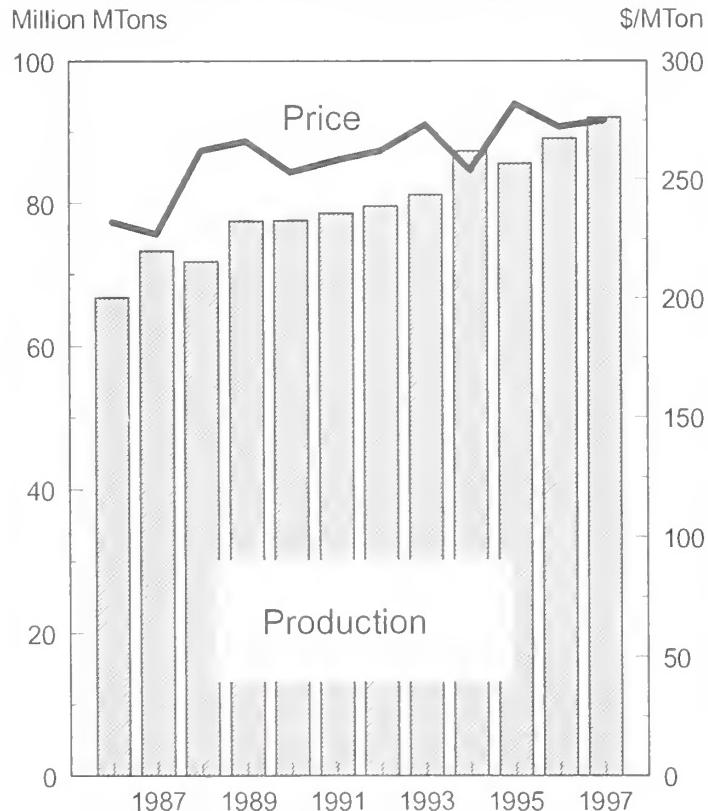
**U.S. Horticultural Production Value
Increases 4.5 Percent Annually**



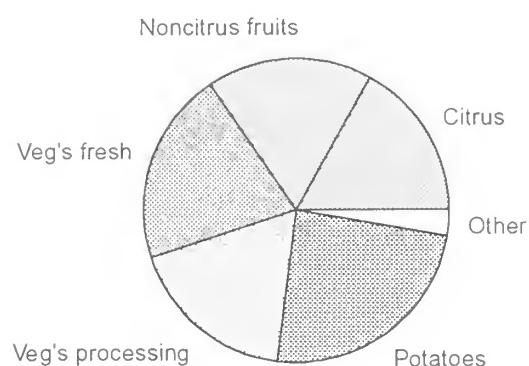
California & Florida Produce Over Half of U.S. Fruit and Vegetable Value



**U.S. Fruits and Vegetables
Price Increases When Production Falls**

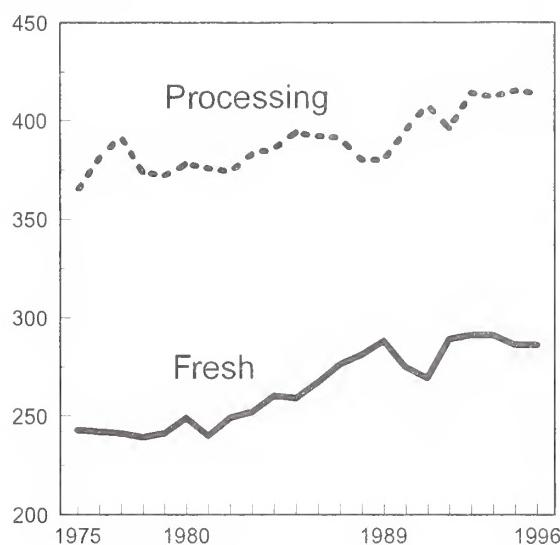


Vegetables and Potatoes Accounted for Largest Share of Production in 1995

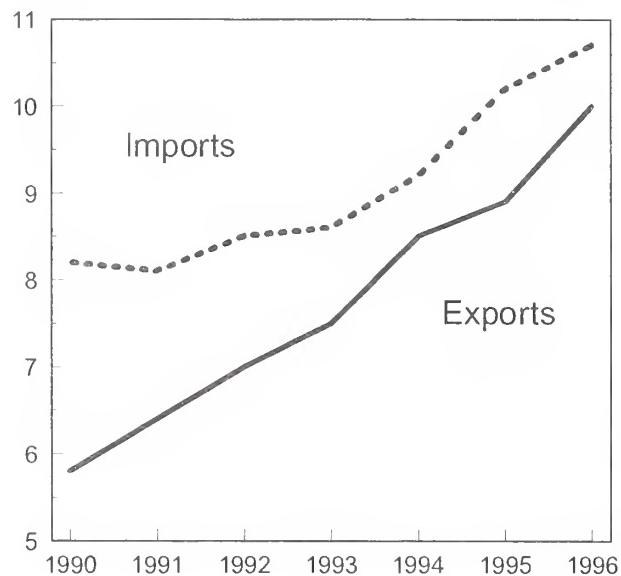


Excludes greenhouse/nursery.

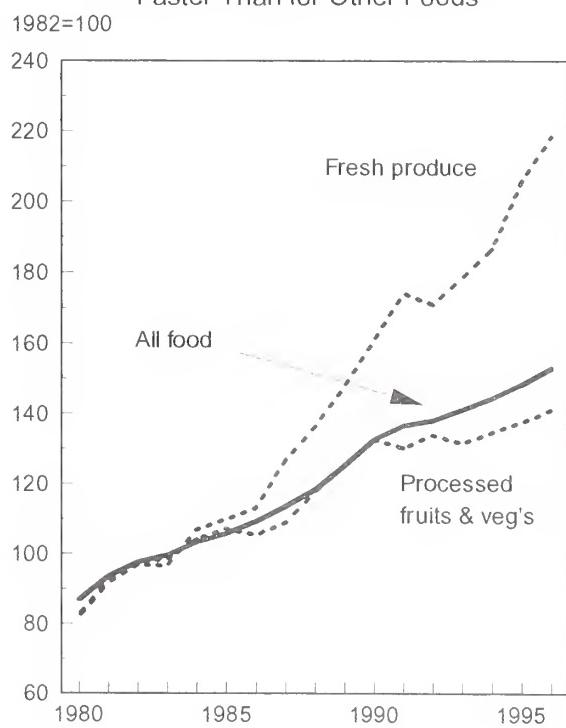
U.S. Consumption Flattened in the 1990's
Lbs/person



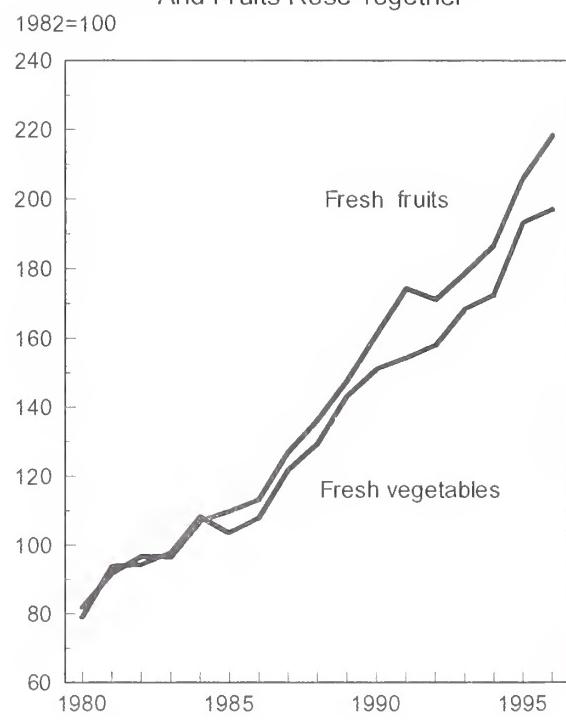
U.S. Horticulture's Trade Balance Narrows
\$ Billion



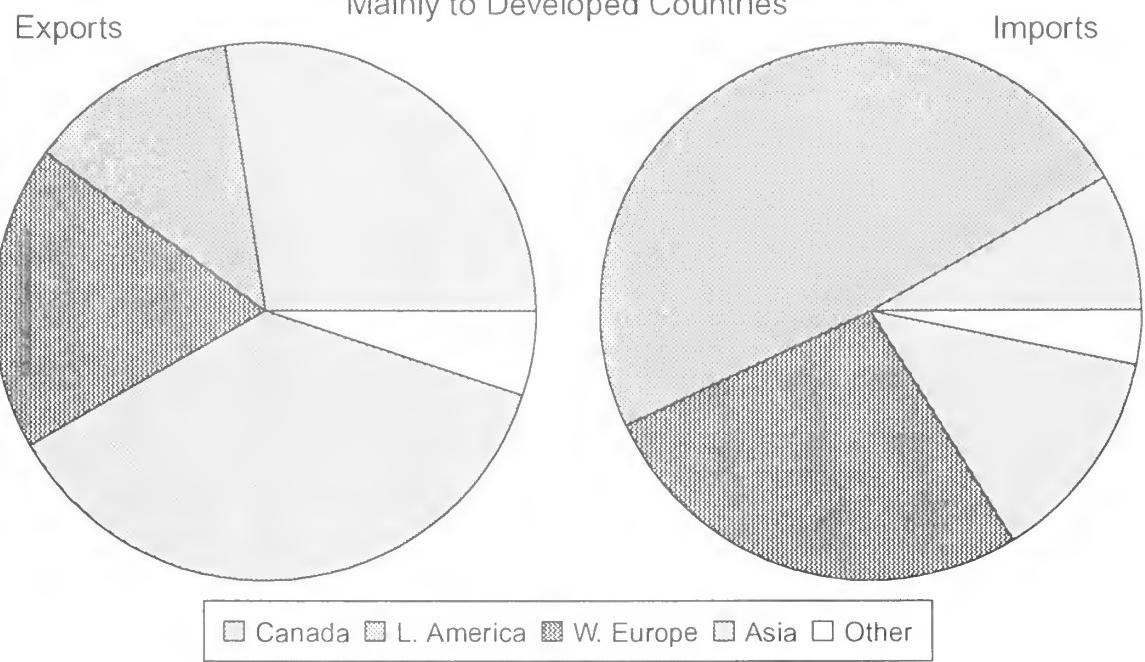
Retail Prices for Fresh Produce Rose Faster Than for Other Foods



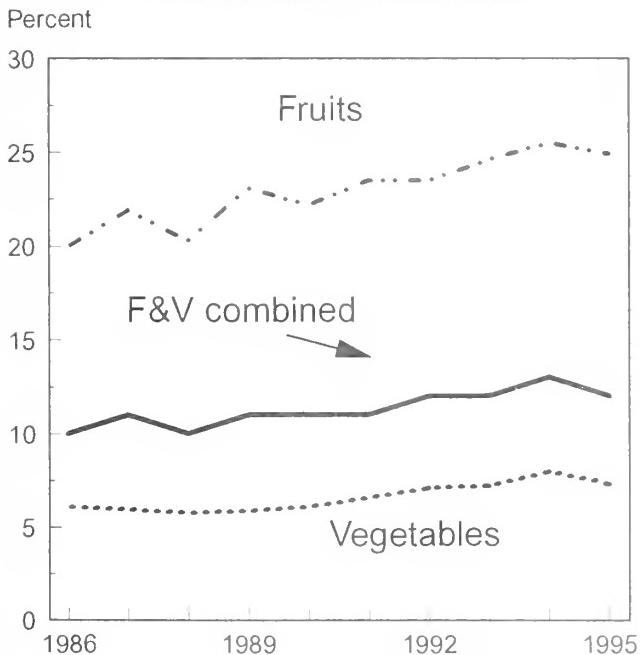
Retail Prices for Fresh Vegetables And Fruits Rose Together



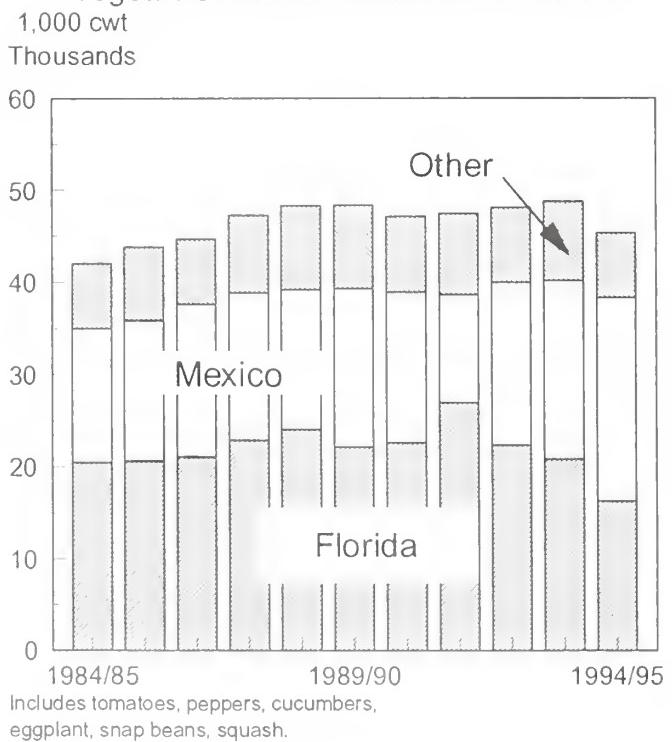
U.S. Exports Horticultural Products
Mainly to Developed Countries



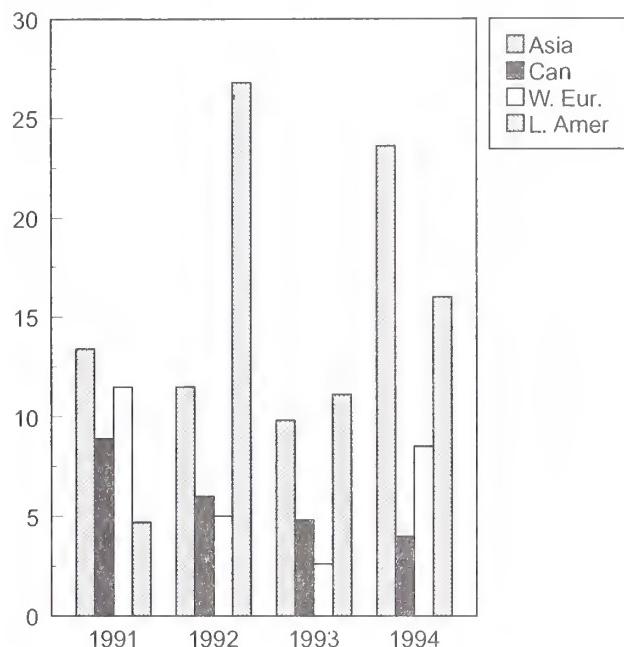
**U.S. Fresh Produce Exports Fell in 1995
As a Percent of Production**



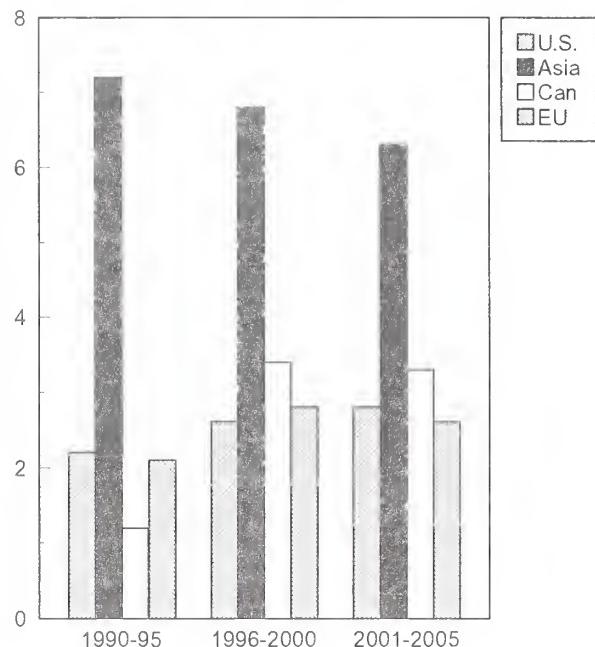
**Florida's Share of U.S. Winter Fresh
Vegetable Market Decreased in 1994/95**



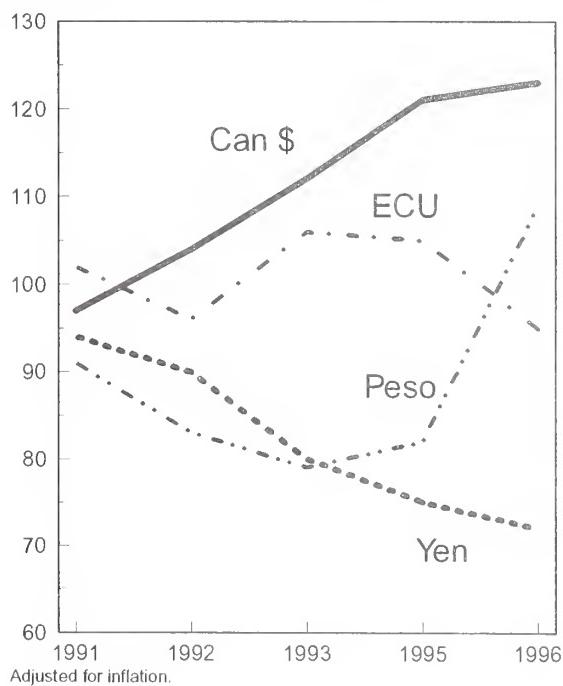
U.S. Horticultural Exports Increased to Asia, Canada, Western Europe, and Latin America
Percent



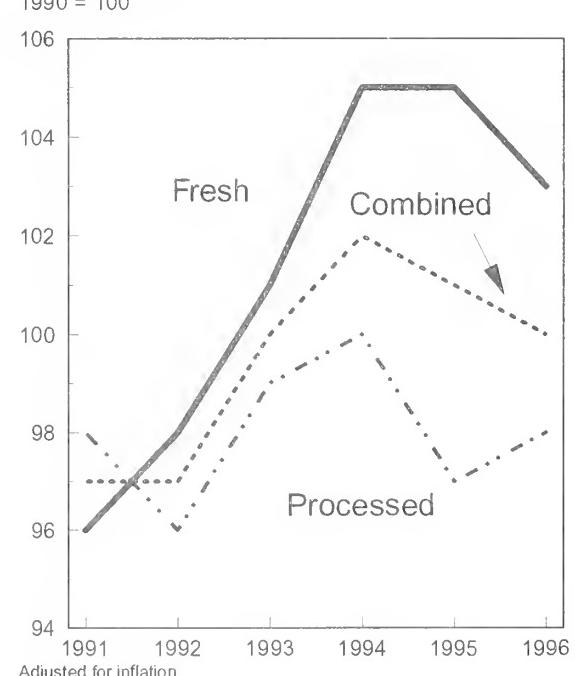
Asian Economies Grow Faster than U.S., Canada, and European Union
Percent per year



U.S. Dollar Exchange Rate
1990 = 100



Horticulture's Exchange Rate Index Favored Processed Products in 1995
1990 = 100



Western Growers Association

Serving the California and Arizona Fresh Produce Industry



Thomas F. DiMare

Chairman - Western Growers Association, Newport Beach, CA

USDA Outlook Conference - February 22, 1996

It is a pleasure to be invited to appear at USDA's Outlook Conference for Horticultural Products and to talk about fresh produce. My family has been involved in the fresh fruit and vegetable industry for 3 generations. We have operations in California, Florida, and Massachusetts. This business has provided us with an exciting and, for the most part, profitable vocation.

The fresh fruit and vegetable industry has grown considerably in the last decade. We can expect further growth for several reasons:

- 1) First, the ongoing publicity that fresh produce is highly nutritious and helps prevent many of our most feared health problems;
- 2) the expansion of opportunities for export to foreign markets; and,
- 3) technology - which will provide better products with higher nutritional value and greater flavor.

There will also be challenges. Most specifically, the opening of our domestic market to fruit and vegetable imports.

To survive in our industry, one must be quick to respond to the rapid changes and emerging trends within the marketplace. We must accelerate our response time since there is every reason to believe that in the future the pace of change will accelerate.

To be successful, one must be constantly alert. Every day there are opportunities to learn something new about the various aspects of our business, be it production, packaging, or marketing.

The growth of international trade can be discussed from two perspectives - from that of the importer or that of the exporter. I heard recently an analogy to describe the current situation. It goes like this: If the international trade portion of our industry was a baseball game, the importers of produce into the U.S. would be winning 10 to nothing over the exporters of U.S. produce.

The reason for this lopsided score is that the U.S. has opened its markets, but unfortunately other nation's markets are not being opened to U.S. produce quickly or reciprocally. If we do not do more to open up markets abroad, the game is going to be over before those of us who export have had a chance to do some scoring.

This analogy does not hold true or apply equally to all commodities - For example, the apple industry is doing very well in export markets.

Let us look at how the growth of international trade has affected the domestic fruit and vegetable industry. While there are over 250 fresh produce crops with thousands of sub-products I choose to focus on three crops - grapes, asparagus, and tomatoes.

Years ago, The California Table Grape Industry was seasonal and production was confined to California and Arizona. Grapes were harvested from June till November and were available at retail until January or February because certain varieties could be stored after harvest.

The California table grape industry operates under the Grape and Plum Act and a federal marketing order. Because of the Grape and Plum Act of 1960, California table grape exports are required to meet a higher grade standard to qualify for export. This higher grade standard is in place because it was recognized that many foreign markets demand higher quality. On the import side, those who ship grapes into the U.S. must meet the standards set by a federal marketing order. Foreign producers claim that the use of marketing order standards is an unfair trade barrier. This is not correct. The marketing order sets minimum berry size and minimum sugar level to assure consumers of consistent quality and sweetness. Consumers have not complained about our quality standards for the export market, but they would complain if we lowered domestic quality standards, especially sugar standards, to satisfy importers.

Incidentally, the marketing order issue was debated in the U.S. Senate, when the import competition wanted to lower the grade standards. It was also a topic in the NAFTA negotiations, and I understand continues to be a point of contention with the Mexican government. In the case of grape standards, one could claim that governments are impacting trade, not the consumer.

Currently, California experiences strong competition both before and after our last harvest. This competition is supplied primarily by one nation - Chile - but we expect more competition in table grapes in the future from Mexico, South Africa and Argentina. Indeed, we saw the volume of imports of Mexican grapes double between 1994 and 1995.

Grapes are not the only challenge on the horizon for our domestic fruit and vegetable industry. I can think of several other examples where we have seen controversy surrounding increased imports: the Florida/Mexican winter vegetable competition; the competition in Maine between Canadian and domestic potato producers; the production of sugar peas in Central America. It would be foolish for us to assume or to expect that these import-related problems will diminish in the future.

Consumer Preference

Turning to a success story, I am pleased to note that the California asparagus industry has experienced remarkable growth in the last five years. This growth can be traced to several factors - industry promotion, meeting consumer demands, and possibly imports.

Until recently, the asparagus industry marketed through availability and word-of-mouth. When the crop was about to be harvested, the shipper would simply call the accounts, and that was all the marketing that was done. Today, California asparagus is being actively promoted through a state commission, and this is undoubtedly a reason for much of our growth.

The asparagus industry also is making every effort to be responsive to consumer demands, both domestically and internationally. For example, the Japanese consumer wants medium-sized spears, four to five to a bundle, weighing no more than 100 grams. In contrast, Swiss consumers demand jumbo asparagus packaged in 1 kilogram bunches and shipped in 15 lb. containers. The domestic consumer wants various sizes of asparagus, which is shipped in 28 and 30 lb. containers.

There is at least one shipper who has twelve different packs to meet these specific demands and types of packaging for asparagus. This is quite amazing when you consider that it is impossible to grow asparagus to a certain size. You have to take the crop as mother nature presents it. The asparagus industry's efforts to meet the challenge of tailoring the product to unique desires is surely one of the reasons for strong growth.

There are several areas where international trade impacts the domestic produce industry. The first area is quality. From my observation, our domestic growers and shippers are increasing the quality of the product because high quality is a key selling point with both domestic and export consumers. The sale of poor quality domestic crops or poor quality imports hurts our efforts to convince the consumer that a high quality produce is worth a premium price. Moreover, the retailers and distributors no longer have the desire or ability to deal with poor quality products. Additionally, many export markets are demanding a level of quality that is higher than that which is demanded by the U.S. domestic market. This provides a great incentive to the domestic industry to improve quality.

Innovation

Another area is innovation. For example, like the asparagus industry, the tomato industry is constantly evolving and innovating to meet new market demand. The most important factor in the tomato industry is the continuous research aimed at finding the ultimate tomato - taste, size, color, shelf-life, etc. Because of this quest, the average life of a tomato variety is five to seven years.

There are numerous reasons for changing varieties, but ultimately it is because of the consumer. Through actual retail sales and sophisticated surveys, the consumer decides which variety of tomato will survive the elimination process. While we also face competition from imports, normally it is our varieties that are being grown in other nations.

Israel and Holland are the exception. They have developed their own specialized varieties. Through a combination of these special varieties, special packaging and niche marketing they have had a meaningful impact on the U.S. fresh tomato industry. For example, Holland has recently begun to export tomatoes on stems into the U.S., this product has been quite successful, even in California. Apparently, the consumer is captivated by tomatoes on stems.

Regarding my earlier comment about the lack of reciprocity in international produce trade, I have a problem with Holland's exports of tomatoes into our market. First, their transportation is subsidized, and this was accepted by the U.S. in the Uruguay Round to the detriment of U.S. produce. Second, tomato stems and vines are prohibited on imported tomatoes under APHIS regulations, yet APHIS turns a blind eye to this issue when Holland, Israel, or other nations ship cluster tomatoes into the U.S. Finally, while we provide ease of access to our domestic markets, those domestic producers who wish to export tomatoes do not find such easy access. We must contend with high freight rates, high tariffs and onerous regulations, and in the case of Japan, an outright ban on tomato imports.

Conclusion

The continuing growth in international trade is forcing our fresh fruit and vegetable industry to contend with rapid change. The more our ports are opened to imports, the more our growers will be forced to improve our competitiveness through efficiency and the development of new market strategies.

In turn, where we are opening new markets for our crops, either through aggressive marketing strategies or the reduction and removal of tariffs and non-tariff barriers, the product is being removed from the domestic markets. This strengthens prices at home while also providing increased revenue from the exported product.

Many of our shippers are reluctant to export because of the greater level of uncertainty which is inherent in foreign markets. Hopefully, the new Supplier Credit Guarantee Program will prove to be a step in the right direction towards reducing the risks of international trade.

The on-going efforts of the Clinton Administration to open the Japanese market to our nation's tomatoes is also a step in the right direction.

Finally, forcing China to remove their many non-tariff barriers to our fresh produce exports must also be a very high priority for U.S. trade policy.

There are many other obstacles to trade in our industry, but it is imperative that these issues be resolved if our domestic industry is going to remain competitive on a global basis and in a U.S. market that is open to imports.

We are a truly international industry, probably more so than the other agricultural commodities, and because of this characteristic I would advise any young person searching for a vocation to pursue a career in the international fresh produce. It is exciting, dynamic, ever expanding, and most of all, constantly changing. With change comes opportunity and with rising incomes and growing population throughout the world demand for fresh produce will continue to increase in the foreseeable future.

It has been a pleasure being with you today. Thank you.

THE EFFECTS OF INCREASED TRADE ON THE U.S. FRUIT SECTOR

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I) INTRODUCTION

The U.S. imported \$4.6 billion dollars worth of fresh and processed fruit products during the last marketing year. Conversely, we exported \$3.5 billion dollars for a net trade deficit of \$1.1 billion. However, exports represented a 7.6% gain over the previous year while imports only increased 5.6%. Apples are the number one export item followed by oranges, grapes, and "other" juices. Bananas are by far the number one import item followed by red wine, table grapes, and apple juice concentrate. Tables 1 and 2 present figures for the major product categories for the latest marketing year.

During the past decade, certain products in particular markets showed phenomenal growth. For example, Washington State apple exports to Mexico increased from inconsequential volumes in 1987-'88 to 7-million cartons in 1993-'94. Brazil imported over 1-million apple cartons from the U.S. in 1994-'95 while in previous years the Brazilian market was closed to U.S. apple exports. U.S. pear exports increased from 1-million boxes in 1987-'88 to 6.8-million boxes in 1994-'95. Lime imports reached 144,000 metric tons (MT) in 1994-'95, while imports in 1987-'88 were only 34,000 MT. Banana imports grew from 2.9 million MT in 1987-'88 to 3.7 million MT in 1994-'95. Dried apricots increased from 3.8 thousand MT in 1987-'88 to 14.3 thousand MT in 1994-'95. Finally, imports of apple juice concentrate increased from 123,600 kilo-liters of single-strength-equivalents in 1987-'88 to 979,900 in 1994-'95.

It is clear then, that within relatively short periods of time the allocation of product to new and/or developing markets can be quite significant. Perennial crops such as the fruits mentioned above, afford marketers an opportunity to know in advance the volume of product that will be available. Therefore, the planning of market development programs can be organized and financed with some lead time.

The growth of imports can be attributed to demographic changes in the case of limes, while the increased consumption of bananas can be attributed to relatively lower prices and nutritional concerns. Most importantly, however, is the drawing of inferences based on the rapidly growing markets such as those described above--i.e. how does one filter "real" market trends from short term market developments?

What follows is a presentation and brief analysis of world trade issues facing the U.S. fruit sector. These issues need to be considered and analyzed at both firm and industry levels. Whoever best evaluates the impact of these issues on their firm or industry will be in a better position to compete effectively.

II) PHYTOSANITARY BARRIERS

The use of phytosanitary barriers as trade barriers will likely increase in use or at least in their perceived use. Perhaps the most visible, current, and contentious example is with regard to U.S.-Mexico avocado trade. Scientists on both sides of the border (and in many cases, trained at the same U.S. institutions) arrived at different conclusions with regards to the probability of particular pests infesting U.S. avocado groves if Mexican avocados entered the U.S. northeast market. Another aspect of phytosanitary barriers is the cost of meeting the agreed upon protocols.

For example, the protocol for exporting U.S. apples to Mexico. In short, in order for Northeast shippers to export to Mexico, they must provide the funds for supporting Mexican inspectors and staffs in the Northeast. Northwest shippers have to adhere to the same protocols, but since the volume of exports is larger from the Northwest, the 'per carton' cost of supporting inspectors is lower in the Northwest and therefore makes them relatively more competitive.

The various sectors of the U.S. fruit industry should consider how well positioned the Animal Plant & Health Inspection Service (APHIS) is in negotiating phytosanitary export restrictions--i.e. negotiating with governments representing potential import markets. Clearly, the agency's track record in protecting U.S. crops from foreign pests is quite good. However, negotiating a protocol for entering a foreign market with fruits produced in many states may result in a protocol that inadvertently may favor a particular producing region. Also, the principle of reciprocity when negotiating both import and export protocols may play a larger role than expected. A particular country may negotiate in good faith a import restriction, if, and only if, it feels its' counterpart is negotiating in good faith a particular export restriction--i.e. avocados from Mexico to the U.S. and apples from the U.S. to Mexico.

The use of these barriers will likely be challenged with the World Trade Organization (WTO), but it is not at clear how the adjudicating mechanism and the corresponding judgments will impact world fruit trade.

III.) ECONOMIES OF SCALE IN TRANSPORTATION

The ability to develop and thereafter enter a market with volumes that support the chartering of vessels will provide such an industry or firm a significant competitive advantage. This is particularly true with north-south trade, but east-west trade may also see more product moving in chartered vessels. What are the economies of scale at shipping point that allow for the capturing of economies of scale in transportation? Is the former a necessary condition? A sufficient condition? It is likely a necessary, but not sufficient condition because 'large' at shipping point does not necessarily mean 'large' in transportation terms. However, if you are not 'large' at shipping point, you certainly will not be able to charter a vessel. The challenge for many shipping point operations will be how a business entity coordinates the 'packing-house sourcing' to be able to charter a vessel.

A related issue is how port facilities, particularly in developing country markets, can facilitate or impede trade. For example, the risk of having a chartered vessel held-up at port is much larger than the risk of having one container held-up. How does a firm weigh the relative port risks against the relative cost advantage of chartering a vessel? One approach may be to develop partnerships with import country retailers so that the retailer shares the import risk, but the exporter will, in turn, have to share the cost advantage of shipping in chartered vessels. Indeed, having the ability to deliver fruit products to the retailer's warehouse may prove to be a competitive advantage for U.S. fruit exporters.

IV.) FIRM ORGANIZATIONAL STRUCTURE

The retailing industry in the U.S. is undergoing a structural transformation, both in terms of size and procurement mechanisms. A corresponding transformation has begun in the U.S. fruit shipping industry and this transformation will likely increase world competitiveness. What attributes should these new competitive firms or industries possess? First, the ability to arrive at quick decisions to respond to changing market conditions will be imperative. These decisions will likely affect the diversion of relatively large volumes of trade, but this ability will develop and sustain market power. Firms should have an ability to source product year round and therefore firms will need to source product from both the northern and southern hemisphere. The interface between firm promotional support and commodity board/commission support will require greater analysis. How can promotional synergism's be developed between firms and boards/commissions? A related question is the

development and sustenance of brands/labels. For example, will the Apple Country^R logo for New York apples play a larger role than the particular label of a New York shipper? Or is the opposite true? Are the assessment dollars supporting the logo yielding a higher return than dollars allocated supporting an individual brand/label? Is trade promotion more advantageous than consumer level promotion? The answers to these questions as they apply to new foreign markets will have a significant impact on the relative success of U.S. fruit entering world markets.

V.) EXPORT TRADING MONOPOLIES

Grain export trading monopolies have been in existence, in one form or another, for many years. In fruit trade, they are relatively new--the New Zealand Boards, for example. However, other less formal "single-desk" selling entities such as export trading companies have existed in fruit trade for some years. There are clear shipping-point advantages to these type of marketing entities, but at issue is the long-term return to grower members as well as whether such entities can withstand a challenge through the WTO. Will a challenge surface within the short-term is difficult to ascertain. However, if such an entity is judged to be operating with some type of unfair trade advantage, then a challenge will be forthcoming and the result of such a challenge can have significant consequences (some positive and some negative, depending on a firm's reliance on such entities) to market participants. One clear outcome of such entities is the ability to develop and increase brand equity.

VI.) PROPRIETARY NATURE OF PRODUCTS

Biotechnology in conjunction with established breeding programs will yield a stream of new varieties within the near future. More importantly, biotechnology will provide avenues for enhancing particular attributes of certain existing varieties or suppressing other less desirable attributes. Marketers with an ability to offer a 'bundle' of fruit attributes in a particular product will likely increase their competitiveness and profitability. The rate of change of consumer preferences has increased and the development of new markets will command greater variation in product form. More importantly, the fusion of multiple product attributes from a particular shipping point will enhance competitiveness because such a shipper can offer a 'bundle' of attributes. Another model would be to license growers in various parts of the world. The patent holder would market all the fruit as a condition for licensing a grower to grow the fruit. No grower would enter such an arrangement unless the expected returns were sufficiently high to compensate the risk of not having the ability to market the product. Therefore, shipping areas with relatively more investments in technological innovation will likely have greater market penetration because technology allows for developing product attributes to specific markets.

VII.) CONTINUED GROWTH IN WORLD FRUIT DEMAND

The future of world fruit trade--particularly from a U.S. fruit exporters perspective--is one of opportunity. Both in terms of an expanding 'pie' and a potential for a bigger 'slice-of-the-pic'. The opportunities for being an exporter in season and an importer out-of-season will expand. The factors that will likely contribute to enhancing U.S. fruit exports to meet increasing world demand are: a.) minimize unit cost to increase margins; b.) increase and maintain quality to increase unit price; c.) invest in storage technology to allow for greater market entrance and exit; and d.) invest in packaging technology to be able to extend shelf-life. The rate of growth of both population and relative incomes in developing countries will likely continue. U.S. consumption of fruit will also likely continue, particularly at the high-end of the market. Therefore, product prices will likely increase faster than inflation and therefore bode well for the industry.

Table 1: U.S. FRUIT IMPORTS, OCT., '94 - SEP., '95

<i>Product Category</i>	<i>Quantity -- 1,000 MT</i>	<i>Value -- \$1,000,000</i>
Fresh	5,680.8 (+5.8%)*	\$2,156.6 (+11.8%)
Wine & Wine Products	249.5† (+1.9%)	\$1,098.7 (-6.8%)
Fruit & Vegetable Juices°	2,425.1† (-24.2%)	\$634.9 (-7.9%)
Canned/Prepared	600.2 (-6.1%)	\$573.2 (0.0%)
Dried	48.4 (+5.4%)	\$69.6 (-6.8%)
Frozen	59.7 (+11.4%)	\$65.0 (+8.5%)
Total		\$4,598.1 (+5.6%)

* -- Percentage change from previous year.

† -- In 1,000 Kilo-liters

° -- Single Strength Equivalency

Source: *World Horticultural Trade & U.S. Export Opportunities, Foreign Agricultural Service, USDA, December 1995.*

Table 2: U. S. FRUIT EXPORTS, OCT., '94 - SEP., '95

<i>Product Category</i>	<i>Quantity -- 1,000 MT</i>	<i>Value -- \$1,000,000</i>
Fresh, Non-Citrus	1,475.5 (-5.2%)*	\$1,256.0 (+0.3%)
Fresh Citrus	1,212.9 (+4.9%)	\$704.8 (+8.7%)
Fruit & Vegetable Juices ^o	923.6† (+16.0%)	\$629.9 (+22.1%)
Dried	214.4 (+6.5%)	\$400.5 (+4.3%)
Wine & Wine Products	136.2† (+4.6%)	\$216.0 (+15.8%)
Canned/Prepared	185.7 (+11.1%)	\$206.6 (+12.4%)
Frozen	52.8 (+6.2%)	\$73.0 (+5.2%)
Total		\$3,486.8 (+7.6%)

* - Percentage change from previous year.

† - In 1,000 Kilo-liters

o - Single Strength Equivalency

Source: World Horticultural Trade & U.S. Export Opportunities, Foreign Agricultural Service, USDA, December 1995.

Table 3: NEW YORK APPLE EXPORTS
 (42 lb cartons)

COUNTRY	1993*	1994/95**	1995/96***
Bermuda		789	807
Brazil		20,537	20,295
Canada	not reported	281,220	368,031
Colombia	1,950	929	2,858
Costa Rica	54,617	51,228	22,171
Dominican Rep.		4,895	6,306
Ecuador	1,968		
Egypt		930	
El Salvador	950		
Germany (DOD)	5,000		
Guatemala	12,174	12,174	924
Honduras	5,266	2,924	3,248
Iceland	4,592	1,783	1,540
Israel		33,080	
Netherlands			1,003
Nicaragua	2,848		
Panama		959	920
Sweden			1,100
Taiwan	2,521		
Trinidad		892	
United Kingdom	477,762	199,780	190,172
Venezuela		840	
Unknown		32,928	25,383
TOTALS	569,649	645,897	644,758

* January 1-December 31.

** July 1-June 30.

*** July 1, 1995-January 12, 1996.

Source: New York State Apple Association.

U.S. AND INTERNATIONAL OUTLOOK FOR TOBACCO

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U.S. OUTLOOK

Tobacco is an important U.S. crop. Around 120,000 farms produced tobacco with a 1995 farm value of about \$2.4 billion.

Cyclical swings in prices in the early part of this century led to grower efforts to control production. The nongovernmental efforts failed and in 1933 the Federal Government began support of farm income through various annual farm commodity programs. The Agricultural Act of 1938 established supply control and price support for certain commodities, including tobacco. Grower approval in a national referendum for each kind of tobacco, makes Federal support mandatory in combination with marketing quotas.

Financial resources for carrying out price support are provided by USDA's Commodity Credit Corporation, through grower cooperatives. By limiting supplies of tobacco, market prices are increased and in this way farm income is supported rather than through Government payments.

Despite a strong market and higher prices this season, the biggest factor affecting the longer-term U.S. tobacco outlook is probably competition--whether the United States can/will compete effectively in world tobacco markets. During the last year, less restrictive import restraints were implemented. This, combined with potential production increases in competitor countries and technologies that reduce the amount of high quality leaf needed to produce good cigarettes does not bode well for use of higher priced U.S. tobacco in U.S. or foreign-produced cigarettes. Other factors also impact the outlook for tobacco. These include: 1) any significant program changes, 2) taxation of tobacco products, and 3) Government regulations affecting tobacco use. Before briefly looking at the longer range prospects for tobacco, lets first focus on this year and the year ahead.

Short-Term Domestic Outlook

Last year, the most notable developments for tobacco growers were weather and disease problems that reduced yields. The smaller U.S. crop together with tighter world supplies and a more favorable outlook for manufacturers because of significantly reduced prospects for a large tax

increase and growing cigarette exports have strengthened demand for U.S.-grown leaf. Prices increased and total sales of flue-cured rose because of large farm carryover from the 1994 crop.

Improved demand together with an agreement by the five major U.S. cigarette manufacturers to purchase nearly 700 million pounds of surplus flue-cured and burley tobacco inventory at a discount from the three loan associations enhanced U.S. tobacco use prospects. These purchases together with increases in buying intentions significantly buoyed marketing quotas in 1995. With reduced loan stocks, a short 1995 crop, and greater cigarette production effective flue-cured and burley quotas are up in 1996 despite a reduction in the flue-cured basic quota. Growers may sell more tobacco in total during 1996/97 with gains in both flue-cured and burley. Price supports have edged up, but prices of flue-cured may decline after the 10 cent gain last year. Burley prices could rise slightly. Production costs are expected to increase.

For other tobaccos, the current marketing years' supplies of fire-cured and Maryland tobacco are higher, but supplies of dark air-cured and cigar tobacco are lower. Marketing quotas and acreage allotments for nine of these kinds of tobacco must be announced by March 1.

Growers raised 16 percent less tobacco in 1995 than the year before. However, significant sales of on-farm carryover flue-cured and burley tobacco lowered 1994/95 marketings only 3 percent. Still, lower carry in of flue-cured and burley reduced supplies for the 1995/96 marketing year by 5 percent. With strong auction demand, flue-cured loan receipts of less than 12 million pounds were a record low and burley loan receipts were virtually nil. U.S. tobacco prices will average about \$1.83 per pound for the 1995/96 season, up 6 cents per pound from a year earlier, surpassing the record high set in 1984.

With a gain in exports and a small gain in domestic consumption, U.S. cigarette output is estimated to have reached a record 745 billion cigarettes last year, 3 percent above a year earlier. Although total cigarette consumption rose a little, the number of cigarettes consumed per capita, 18 years and over, fell in 1995 to about 2,506 (125 packs)--a 0.5 percent decline but the smallest annual drop in over a decade. Lower cigarette prices are more than offsetting the effects of restrictions on where people can smoke, continued antismoking activity, and health concerns. However, small reductions in total consumption may occur in both 1996 and 1997.

Retail cigarette prices averaged 2.5 percent higher in 1995 than in 1994 but 1 percent lower than in 1993. Further price increases are likely in 1996. State excise taxes average 34 cents per pack in August and ranged from 2.5 cents in Virginia to 80.5 cents in Washington. The Federal excise tax remains at 24 cents per pack.

Among other tobacco products, a big development the last two years has been the rise in large cigar output. Higher priced cigar output now dominates total consumption. A ten percent increase in consumption in 1995 boosted consumption of large cigars to their highest level since 1988.

Based on 11 months data, the value of U.S. exports of tobacco and tobacco products in 1995 will be near 1994's \$6.7 billion record because of increased cigarette and unmanufactured tobacco exports. In recent years, leaf and products exports have taken about one-half the U.S. tobacco crop. U.S. tobacco leaf and product exports provided a substantial surplus over tobacco imports worth around \$850 million last year, thereby relieving some of the pressure on the overall U.S. balance of payments deficit.

Pete Burr will discuss export and import trends shortly. Before I turn the presentation to Pete, I would like to make a few comments about the longer term outlook for tobacco.

Longer Range Prospects

Despite what looked like dire prospects for the U.S. tobacco industry in the mid-1980's and again in 1993 and 1994, we recently ended a year when grower prices were strong, loan takings at a record low, cigarette production a record high, cigarette exports a record high, a tobacco trade balance near the record high and the first increase in U.S. cigarette consumption in 10 years. Can these kinds of numbers be repeated as we enter the 21st century. I have been involved with this industry too long to say its impossible, it is not. But, clearly the likelihood is much greater for reduced numbers.

As mentioned earlier, competition is the most pressing problem the United States tobacco industry must deal with. Over time, unless U.S. prices come more in line with major competitors, more and more of the world's production will move overseas. In addition, multinational firms are likely to expand operations overseas and reduce or slow the increase in use of U.S.-grown leaf in cigarettes manufactured for sale overseas. These factors could curtail overseas sales of U.S.-grown leaf.

During the last few years, domestic sales of cigarettes have stabilized. However, the likelihood of continued stable or growing U.S. cigarette consumption is small. Still, we foresee only small annual declines during the next several years.

Clearly, though, big reductions in cigarette consumption could occur during the next decade. The push to dramatically increase excise taxes could reappear with success. The Food and Drug Administration (FDA) could start regulating cigarette sales and/or use and the Occupational Safety and Health Administration of the U.S. Department of Labor might prohibit or severely restrict workplace smoking. Although cigarette manufacturers have made no payments under product litigation suits, this could change. Any changes or combination of changes that restrict tobacco use and/or increase the costs of tobacco products, will reduce consumption.

INTERNATIONAL OUTLOOK

The United States is one of the world's leading tobacco exporting and importing countries.

U.S. leaf exports remain strong and cigarette trade in 1995 is expected to surpass last year's record high. Many countries are beginning to realize the export earning potential of tobacco and are aggressively seeking to capture a larger share of the world tobacco market. The United States still maintains a clear advantage in terms tobacco quality. However, price is becoming more and more of a factor, and many countries are now selling leaf tobacco at nearly half the price of the United States. Consequently, the world leaf market has become a very competitive place.

U.S. Tobacco Trade

In 1994, the United States exported 434 million pounds of unmanufactured tobacco, valued at \$1.3 billion. This was 5 percent lower in quantity and 1 percent lower in value from 1993. The overall decline in U.S. leaf export sales in 1994 can be mainly attributed to a world oversupply situation that existed during the past few years. Ample supplies of leaf tobacco generally depressed prices and increased the level of competition.

Flue-cured and burley tobaccos, including stems, when combined account for over 90 percent of U.S. leaf exports. In 1994, flue-cured exports reached 237 million pounds, valued at \$749 million. This represents a decrease in quantity of nearly 4 percent, and a drop in value of 1 percent from 1993. U.S. burley exports for 1994 reached 110 million pounds, valued at \$381 million, down 4 percent in volume, and down 2 percent in value.

The United States' leading unmanufactured tobacco export markets in 1994 were Japan, Germany, the Netherlands, Turkey and Thailand. When combined, these markets account for about 60 percent of U.S. leaf exports.

So far in 1995, which is for the period January through November, U.S. leaf tobacco exports totaled 414 million pounds. This is about 6 percent or 23 million pounds more than the same period in 1994. We expect that U.S. leaf exports will continue on this positive note and end the year with shipments of over 452 million pounds.

U.S. cigarette exports in 1994 reached a record high of over 220 billion pieces, valued at almost \$5 billion. This represents an increase in volume of nearly 13 percent, and an increase in value of 26 percent from 1993. The United States' leading cigarette export markets in 1994 were Belgium/Luxembourg and Japan, which when combined account for over 58 percent of U.S. cigarette trade. Other markets include Saudi Arabia, Lebanon, Singapore and Hong Kong.

For 1995, U.S. cigarette exports are expected to reach another record high. Through November, cigarette exports totaled over 211 billion pieces and should end the year at around 235 billion pieces. Shipments to Japan so far this year are running nearly 11 percent higher than the same period last year.

U.S. leaf imports for consumption have climbed quite dramatically over the last several years. Although a good deal of this was oriental tobacco, a tobacco type not grown in the United States, imports rose from about 433 million pounds in 1988 to over 1 billion pounds in 1993. However, in 1994 imports plunged by nearly half to 536 million pounds, valued at slightly more than \$613 million. Overall, the leading suppliers of U.S. leaf imports in 1994 were Brazil, Turkey, Zimbabwe, Malawi, Argentina, Thailand and Greece.

So far this year, imports are again running lower. Through November, U.S. leaf imports totaled 386 million pounds, valued at \$512 million. That's 14 percent lower in volume and 3 percent lower in value from 1994. Flue-cured imports are down nearly 45 percent at 57 million pounds, and burley is down 73 percent to 31 million pounds.

International Situation

China dominates the world in terms of leaf tobacco output. China produces over 40 percent of the world's leaf tobacco, nearly 5 times the level of the world's second leading producer - the United States. For 1996, China's unmanufactured tobacco production is expected to total over 6.8 billion pounds farm-sales-weight, 32 percent more than in 1995, and almost 40 percent higher than in 1994. Flue-cured tobacco accounts for nearly 90 percent of China's leaf output.

The overall quality of China's leaf tobacco is still relatively low. However, the Chinese tobacco monopoly is encouraging the production of better quality tobaccos and cutting back on the output of lower grades. This policy is fueled by an increased demand in China for higher quality tobacco products brought on by economic growth.

Most of China's leaf output is consumed domestically. However China is becoming increasingly interested in the export earning potential of leaf tobacco. For 1996, China's leaf exports are forecast to total 115 million pounds, over 60 percent higher than in 1990. Flue-cured accounts for over 90 percent of this trade. The leading export markets for Chinese leaf are the European Union, Russia, Indonesia, Singapore, Canada and the United States.

India's total leaf output in 1996 is forecast to reach over 1.1 billion pounds. More than 75 percent of this is dark air-cured and sun-cured tobaccos. This year, India's production of dark tobaccos is expected to total about 838 million pounds, about 5 percent lower than last year.

Flue-cured tobacco plays a major role, particularly on the export side. India's flue-cured output this year should total about 262 million pounds. Although higher in 1996, India's production of flue-cured has been following a downward trend, down about 5 percent from 1994, and 25 percent lower than in 1993 and 1992. Much of this decline is due to lower prices brought on by high stock levels, and the Tobacco Board's efforts to reduce flue-cured output in certain less profitable areas.

India's total leaf exports in 1996 are forecast at over 155 million pounds, up from 143 million pounds in 1995. Flue-cured tobacco accounts for over 60 percent of exports and are expected to reach over 110 million pounds this year, 11 percent higher than in 1996, and over 65 percent higher than in 1994.

Despite an agreement by Russia that they would purchase nearly 45 million pounds of Indian tobacco annually between 1994 and 1996 as part of India's ongoing debt repayment, there have been no sales made through 1995. However, the Indian tobacco industry is optimistic that exports to Russia will eventually pick up as the Russian cigarette industry continues to modernize. Indian exporters are also turning their market development efforts to the Far East and Southeast Asia, particularly Vietnam.

Brazil is the world's leading flue-cured exporting nation and is fourth in the world as a burley exporter. Flue-cured tobacco is the mainstay of Brazil's leaf industry, accounting for over 70 percent of their production, and nearly 80 percent of their exports. This year, Brazil's flue-cured output is expected to increase 10 percent to over 700 million pounds on more than 412,000 acres. The tobacco industry in southern Brazil is expected to raise grower prices in 1996 to encourage plantings in order to avoid tight supplies.

Brazil's flue-cured exports reached a record in 1994 with trade of over 502 million pounds. Much of this increase can be attributed to high stocks on hand. In 1995, flue-cured exports fell back to around 403 million pounds and are expected to remain near 409 million pounds in 1996.

Significant growth in Brazilian exports is not expected in the short term. The relative strength of the Brazilian real against the U.S. dollar has made Brazilian leaf relatively more expensive and consequently less competitive. Brazil's export prices for the 1995 season were 30 to 35 percent higher than in 1994.

Brazil has also become a major player on the world burley market. For 1996, Brazil's burley crop is expected to be 165 million pounds, with exports reaching over 88 million pounds.

The European Union is by far Brazil's leading export market with total leaf sales in 1994 of over 277 million pounds. The United States is second with trade of 159 million pounds. Other markets for Brazilian leaf include Japan, the Philippines and Egypt.

In Turkey, total unmanufactured tobacco production is expected to reach almost 500 million pounds in 1996. Oriental tobacco accounts for over 95 percent of Turkey's leaf output and is expected to reach almost 480 million pounds this year, about 32 million pounds more than in 1995. The Government of Turkey is attempting to control oriental tobacco production in order to solve the expensive problem of chronic over production and high stocks. Flue-cured output, although still relatively low, has increased more than 5-fold since 1990 and is expected to

reach 16.5 million pounds in 1996.

Exports of oriental tobacco this year are forecast at 243 million pounds, down from a record 265 million pounds in 1995. A decline in the demand for lower quality oriental tobaccos and greater supplies of oriental worldwide account for much of this decline.

Turkey's exports, however, are expected to remain strong for the foreseeable future. The Government's decision to end its Minimum Export Price system and allow for greater export pricing flexibility, along with changes in U.S. import tariffs and content laws, and increased consumption from the Former Soviet Union, are expected to keep the demand high for Turkish oriental tobacco.

Turkey's imports of unmanufactured tobacco are expected to rise as domestic production of non-oriental tobaccos used in the production of the increasingly popular American blend cigarette is not sufficient to keep up with demand. For 1996, leaf imports are forecast to reach about 66 million pounds, with about 70 percent of this flue-cured tobacco.

In Zimbabwe, flue-cured tobacco accounts for over 95 percent of total leaf production. Zimbabwe's flue-cured output in 1996 is expected to total 463 million pounds, more than 5 percent higher than in 1995, and nearly 24 percent more than in 1994.

Favorable prices pushed plantings up 7 percent last year, and growers are responding to a call by the Zimbabwe Tobacco Association (ZTA) to increase production of flue-cured tobacco an additional 7.5 percent in 1996.

Zimbabwe exports most of its flue-cured crop. Exports of flue-cured in 1996 are forecast to reach over 385 million pounds, an increase of about 7 million pounds over 1995. The European Union accounts for nearly half of Zimbabwe's leaf exports, followed by markets in Asia and the United States.

Italy is a major producer and trader of flue-cured, burley and dark air-cured tobaccos. Italy's total leaf output this year is projected at 289 million pounds, about the same level as in the past four years.

However, many changes have recently occurred in the Italian tobacco sector. Major modifications have been made in the European Union's Common Agricultural Policy for tobacco resulting in a substantial decline in Italy's leaf output during the period 1990 through 1992.

In past years, the tobacco CAP heavily subsidized EU tobacco production and trade to the point of overproduction. Italy's leaf output soared from 204 million pounds in 1976 to over 400 million pounds in 1990. Leaf supplies grew to excessively high levels and the program

became a significant financial burden to the European Union. Many growing regions were producing tobacco strictly for the subsidy.

However, beginning in 1992 the EU cut production quotas, and eliminated or reduced many of the tobacco subsidies. These changes had a dramatic effect on the EU's production and trade of the problem varieties, and for Italy this is particularly true for the dark air-cured tobaccos.

In 1988, Italian production of dark air-cured leaf totaled over 162 million pounds. However, beginning in 1991 output of these tobaccos declined dramatically and are expected to fall to below 40 million pounds this year.

Italy's flue-cured and burley tobaccos have not been hit as hard by the CAP changes. Output of these types have actually trended higher. Production of flue-cured tobacco in 1996 is expected to total almost 106 million pounds, unchanged from last year and about 4 percent higher than in 1994. Burley output in 1996 is expected to total about 100 million pounds.

Italy's leaf exports this year are forecast at about 220 million pounds. Flue-cured and burley when combined account for about 70 percent of this trade. Burley exports are expected to reach 88 million pounds, and flue-cured about 73 million pounds. Most of Italy's flue-cured and burley exports are destined to other EU markets, although Egypt is a sizable burley market. Most of the remaining exports are dark-air-cured and oriental tobaccos and have fallen as dramatically as output.

Greek tobacco production is expected to total about 287 million pounds in 1996, down slightly from 1995, and 3 percent lower than in 1994. Oriental tobacco accounts for about 65 percent of Greek output with an expected crop size of 184 million pounds in 1996, down slightly from 1995. Flue-cured output is forecast to total 76 million pounds, while burley production is likely to be nearly 27 million pounds. A gradual reduction in Greek tobacco output is expected over time due to the changes already mentioned in the European Union's (EU) Common Agricultural Policy (CAP) for tobacco.

Exports are important to the Greek tobacco industry. In 1996, Greek exports are expected to reach 176 million pounds, down 20 percent from 1995 and 27 percent lower than 1994. Lower exports of both flue-cured and oriental tobaccos due to reduced output and the elimination of the CAP's tobacco export subsidy account for much of the decline.

Closing Remarks

As you can see we are faced with a very competitive international market. Leaf quality is still a major factor in making a sale. However, many countries are now growing tobacco that is desirable and it is becoming more and more a factor of simple economics when seeing who is moving ahead. That concludes my remarks. I thank you for your attention.

**BURLEY GROWER PERCEPTIONS AND CONCERNS
REGARDING THE CURRENT TOBACCO OUTLOOK**

**William M. Snell
Associate Extension Professor, University of Kentucky**

U.S. tobacco growers' perceptions of the current tobacco outlook are like many industry analysts -- confused and uncertain. For decades tobacco growers have been warned from policy makers, industry analysts, the media, and others that future of the domestic tobacco industry was bleak. During the early 1990s, escalating imports, tax threats and burdensome pool stock levels threatened to make the depressed outlook projections reality. However, these issues, for at least the time being, have subsided. However, potentially more damaging issues have taken their place. Currently, the industry is facing increased regulatory pressures, a large number of potentially damaging law suits, constant threats of losing the tobacco program, a more relaxed tobacco import policy, and growing competition overseas. Despite these negative factors, the industry is simultaneously experiencing a number of positive trends including record highs for domestic cigarette production, cigarette exports, and U.S. grower prices for 1995. The U.S. tobacco trade balance will also approach record levels for 1995. Imports have fallen considerably during the past two years, while (uncommitted) loan stocks have declined to very low levels. Furthermore, higher marketing quotas this year may allow the value of U.S. tobacco production to once again approach \$3 billion.

Growers during this period of improving market conditions are still very skeptical about current market signals. They are asking many questions such as: Will increased marketings result in excessive pool stocks and lower prices for 1996? Will quotas fall abruptly in 1997? Will the companies begin to dramatically increase imports under the revised import policy? Will U.S. leaf exports return to their downward trends once world tobacco supplies become more available. Will the program survive amidst the "Freedom to Farm" environment? If so what are some acceptable policy options to sustain future quota? How will the pending FDA, OHSA and the legal decisions confronting the tobacco industry affect tobacco farming operations? These and other uncertain issues complicate the outlook for domestic growers for 1996 and beyond.

Given the wide array of issues facing the industry, growers are debating many policy issues as they relate to price, quality, and quota. My remarks will be directed toward these three items. Since I work primarily with burley tobacco growers, my remarks will focus on the U.S. burley tobacco industry. However, many of these issues certainly apply to the U.S. flue-cured sector as well.

Price and Quality Competitiveness

Cigarette manufacturers and dealers are well aware of the importance of competitiveness in surviving in the international tobacco market. U.S. burley tobacco growers, while recognizing the growing importance of the international market, have generally in the past been reluctant to support policies designed to aggressively regain lost market share. For the past several years I've been talking to farm groups and growers about the importance of competitiveness in today's world burley market -- emphasizing that if the industry does not address

price and quality competitiveness, U.S. quotas and world market share will follow a long-term downward trend. Traditionally burley growers (characterized primarily by small quotas, limited labor supplies, and limited barn space) have generally discounted the importance of competitiveness and thus been willing to sacrifice quota in order to maintain price. However, over the past couple of years I have sensed somewhat of a change in the position of the burley leadership in addressing long-term U.S. competitiveness in the world tobacco market. While I'm sure it fell short of what the buying industry desired, I thought that the marketing changes approved by the burley leadership on the National Tobacco Advisory Committee were certainly a step in the right direction.

As you know many of these recommendations (e.g., pregrading, moisture testing, price support adjustments and group grading) were implemented during the 1995-96 burley marketing season. Given the world supply and demand conditions, it was not the educational moment to illustrate the potential positive effects of these changes. The short crop resulted in basically a one-price burley market by the end of the marketing season, which defeated attempts to reward (penalize) growers producing the highest (lowest) quality tobacco. And now with a 15 percent increase in burley quotas, it makes it extremely difficult (or virtually impossible) to talk to growers about price competition.

My strategy in this current environment is to talk to farmers about the world tobacco production cycle. The concept of a production cycle is in the minds of many tobacco farmers right now as many are suffering greatly from the depressed price effects evolving from the current stage of the cattle cycle. I tell them that in several years we will likely see world tobacco production once again increasing and this will put downward pressure on world burley prices. This situation will challenge our exports and likely lead to greater imports into the United States under our revised tobacco import policy. Thus it is imperative that our farm leadership constantly address our quality and price competitive position if the goal is to sustain future quota levels.

Price competitiveness is currently being addressed by burley leadership via loan rate adjustments designed to basically freeze average market prices (during periods of normal supply and demand conditions) for the next five years. Currently burley leadership is placing more emphasis on quality competitiveness. Given the cost structure under the existing program, U.S. burley growers realize that they cannot compete directly on price. There is a growing world market for lower-cost/lower-quality burley tobacco. However, U.S. burley growers are willing to sacrifice the lower quality/filler market in an attempt to sustain the current niche market for the higher-quality/higher-priced leaf.

U.S. burley growers are probably in a better position to maintain their existing market share than U.S. flue-cured growers. Presently, U.S. burley growers face less major competitors in the world market compared to U.S. flue-cured growers and the quality advantage of U.S. burley over its competition appears to be more distinct than the quality advantage enjoyed by U.S. flue-cured growers. Consequently, the domestic burley tobacco industry has been able to sustain quotas and world burley export share much better than the domestic flue-cured tobacco industry.

Recognizing the unique role that quality plays in the world burley market, burley leadership is continuing to emphasize quality and improving the integrity of the U.S. marketing system. This past year the grower leadership experimented with pregrading and moisture testing, reorganized loan rates to better reflect quality preferences, and made a concentrated effort to educate growers of the importance of quality in today's competitive world market. Some burley farmers

and warehouse operators were not fully supportive of some of these changes. They wanted to see immediate rewards on the market floor with respect to price. However, successful efforts in improving quality and the integrity of the U.S. marketing system will likely have a greater positive impact on future quotas than on current prices. The main question becomes will these changes be enough to prevent large quota declines when we return to periods of adequate or excessive world burley supplies?

Quota Volatility: Implications for 1996 and Beyond

Another interrelated item on the minds of burley growers is quota volatility. The burley quota formula has called for a 10 percent or greater change in the burley quota for nine out of the past 13 years. Legislated quota reduction caps ultimately reduced quota volatility during much of this period. However these quota reduction caps contributed greatly to the excessive level of pool stocks observed during the early 1990s. Some of the press and others incorrectly portrayed the recent pool stock buy-out agreement as a means for obtaining future quota stability. But this just isn't the case! By design, the tobacco program creates price stability at the expense of quota instability. Furthermore, given the expanding role of burley tobacco in the international marketplace, U.S. burley growers are a lot more vulnerable today to changes in world supply and demand conditions than they were some twenty-five years ago when they were producing primarily for a domestic market. Growers need to understand that future quota/production stability can only be enhanced by allowing more flexibility in U.S. burley prices to changing world market conditions.

Given the current tight world supply/demand balance and the large volume undermarketings from this past year, the 1996 U.S. burley effective quota will be around 725 million pounds -- 25 percent above 1995's effective quota. This will once again elevate quota to a level that will make it very difficult for the burley industry to produce given limited labor resources and curing space. The 1996 effective quota will be similar to the effective quota in 1993. Yields in 1993 were fairly close to average, resulting in 632 million pounds (or 88 percent) of the quota being produced. However, during 1993 Kentucky farmers were observing cattle prices in the 70s and 80s (cents/lb) with relatively low feed costs. Cattle prices for 1996 are forecast to be some 25 to 30 percent below 1993 levels and feed prices will likely remain relatively high. Consequently, I anticipate burley acreage to be more responsive to this large quota increase. Given average yields, the 1996 U.S. burley crop may total around 650 million pounds (90 percent of the effective quota).

With such a large increase, growers are once again skeptical about what is causing this to happen. They are worried about the potential of increased marketings leading to higher loan stocks and marketing assessments while lowering prices. As a result, farm leadership initially was leaning towards recommending the Secretary of Agriculture use his discretionary authority to limit the quota increase. However, input from several buying interests convinced farm leadership to support the eventual 15 percent quota increase. As I look at the current situation, if world burley supplies outside the United States do not rebound significantly in 1996 and we have no surprises out of Washington D.C. in terms of taxation or regulation, this quota increase could put an additional 50 to 75 million pounds in the burley pools -- an acceptable level which would keep the no-net-cost assessment at relatively low levels. Assuming the price support structure for individual grades remains similar to last year, "tip" grades will likely continue commanding top price -- mid to upper 180s. However, with a larger crop, growers can expect to observe more price variability among grades. While

premium grades may still command prices similar to the 1995 market, the increased marketings and pool intake will likely lower the overall average price -- perhaps to the low 180s given a decent quality crop.

What about beyond 1996? The current trend in market prices will keep the average price support from changing much, if any, during the next couple of years. This should aid the burley leadership in their goal of freezing future market prices. Leaf exports may increase in the short-term, resulting in a modest increase in the 3 year average of leaf exports in the quota formula. However, this will likely be offset by a lower reserve stock adjustment. Thus, in order to stabilize quota for 1997, purchase intentions will likely have to remain above 400 million pounds. Given my track record on forecasting purchase intentions I will not venture a guess on this one. Past experience reveals that politics probably plays just as, if not a more important role than economics in determining purchase intentions. However, the anticipation of increasing world burley supplies, a more liberalized U.S. tobacco import policy, and the current Washington D.C. environment towards tobacco will certainly make it challenging for the U.S. burley tobacco industry to sustain burley (basic) quotas above 600 million pounds in the near future.

Concluding Remarks

In the past, the world market reacted to U.S. tobacco policy and the U.S. market. But competition has intensified dramatically over the years in the world tobacco market, resulting in a declining U.S. share of a growing world tobacco market. In order to survive in the future, the U.S. tobacco-growing sector cannot ignore what the international market is telling them with respect to price and quality. The current world tobacco supply/demand balance is not pressuring U.S. tobacco growers to immediately address its competitive position in the world market. However, anticipated increases in future world tobacco supplies could once again invoke significant declines in U.S. marketing quotas and world market share if farm leadership decides to ignore competitive market forces. That's why it is imperative that the U.S. tobacco farm leadership continue to communicate regularly with the customers buying their tobacco, learn about their competitors and continue to focus on long-term policy and marketing strategies designed to sustain the U.S. tobacco-growing sector. Likewise U.S. tobacco growers must continue to modify production and marketing practices to lower their cost structure and to supply the quality preferences demanded in today's world market. These actions by both farm leadership and the farmers will enhance the U.S. tobacco grower's ability to take advantage of a growing world market for blended cigarettes.

USDA/NOAA METEOROLOGICAL INTERACTIONS

Albert Peterlin
Chief Meteorologist, World Agricultural Outlook Board

This is quite an opportune moment for me to assume the duties of Chief Meteorologist at the United States Department of Agriculture (USDA), World Agricultural Outlook Board (WAOB). Meteorology, its data collection, its use in atmospheric modeling, and its application in forecasts, general and specific, is undergoing change and is having to adapt because of the changing political climate.

What I'm alluding to are changes taking place within the Department of Agriculture, the National Weather Service (NWS), and changes necessitated in the relationship between the two agencies because of these changes. I have not yet refined the vision of what I would like to see accomplished under my tenure. I do know I will try to represent all portions of the USDA with weather and weather related interests. I also know that with the NWS concentrating on its forecast and warning functions and moving away from specialized support, I believe it will be necessary for USDA, as a specialized user of weather and climate data and information to pay special attention to the data itself, how it's collected, how it's processed, and how it's made available. I also know that there will have to be a significant shift in emphasis, a stronger and more thorough incorporation of all the talented staff of the Joint Agricultural Weather Facility, NWS and USDA.

I would like to take a few moments to introduce myself. I am a native of Northeastern Pennsylvania; from the small coal mining town of Vandling. Vandling is just north of Scranton, Pennsylvania. I received my B.S. in Meteorology from the University of Oklahoma at Norman while I was on active duty with the United States Air Force. I remained on active duty for 6 years, serving as a weather forecaster, Wing Weather Officer, and as a staff Officer to Air Weather Service Headquarters. I served another 20 years in the Air Force Reserves.

I started working for the National Weather Service shortly after my release from active duty. I completed the NWS Intern Program at Louisville, Kentucky and then moved to the Midwest Agricultural Weather Center at Purdue University, West Lafayette, Indiana. I spent 10 years in the Midwest, doing all tasks of an agricultural meteorologist, including data collection and the preparation of Ag advisories. I moved to the River Forecast Center in Harrisburg, Pennsylvania in 1987, working as a hydrologist for several years. I then moved on to National Weather Service Headquarters in Silver Spring, Maryland, where I served as modernization focal point for the Office of Hydrology, first working on the Doppler radar program, WSR-88D or NEXRAD, and then as Branch Chief for Services and Systems. During this period, I also served as Deputy Program Manager for AWIPS, the NWS modernized computerized system for communication and forecast preparation in the future.

The NWS modernization programs, with which I was intimately involved in the past 5 years, are going to completely change the way the NWS "does business." How will the new tools, the new data streams, the new way of integrating these data streams impact users, private and governmental? In many instances, the answer is not known. The impacts are yet to be determined.

To shed some light on these new opportunities, I will in turn introduce, Therese Pierce, Chief Meteorological Services Branch, National Weather Service Office of Meteorology, for a short history of NWS agricultural weather programs as they evolved and as they will be in the future; Jim Laver, Acting Director, Climate Prediction Center, National Weather Service, for a short discussion of NWS climate support for the Joint Agricultural Weather Facility; and Dr. Ray Motha, Supervisory Meteorologist, Joint Agricultural Weather Facility, USDA, for an introduction to JAWF and a global overview of world weather conditions and an impact assessment. Their talks will be followed by a poster session with JAWF, USDA, and NWS staffs discussing crop-weather conditions in their primary weather regions of concern.

**AGRICULTURAL WEATHER SERVICE
NATIONAL WEATHER SERVICE**

**Therese Pierce
Office of Meteorology, National Weather Service**

The National Weather Service (NWS) has a long history of providing the Nation's agricultural community with weather and climate information through specialized agricultural weather and fruit frost forecasts. These agricultural products and services are provided from NWS field offices.

To support the President's Initiative, Reinventing the Federal Government, Phase II, the President's Fiscal Year 1996 budget includes privatization of the NWS Agricultural Weather and Fruit Frost Programs. While a final budget resolution has not been reached, the budget under the Continuing Resolution upholds the President's intent to privatize these programs. The NWS will no longer provide agricultural weather forecasts after April 1, 1996, and fruit frost forecasts after April 20, 1996.

The Joint Agriculture Weather Facility and Climate Prediction Center will continue to provide all of the agricultural and climate related services as they have in the past. The Weekly Weather and Crop Bulletin, Palmer Drought Index, and Crop Moisture Index will continue to be provided to the agricultural and climate community.

The NWS will continue to fulfill its' critical role of maintaining and providing controlled agricultural weather observations to the public and private sectors. Weather guidance, forecast and warning support will continue to be provided to these user communities through the Public Weather Services Program of the National Weather Service.

The NWS is currently undertaking efforts to define a futures suite of guidance and outlook products, and other information of use to providers of agricultural weather services. These will be based upon the needs of those private and public sectors responsible for providing agricultural services to the Nation.

THE DOC/NOAA ROLE IN JAWF AND RELATED USDA ACTIVITIES

Jim Laver

Acting Director, Climate Prediction Center, National Weather Service

Under the Interagency Agreement between the Departments of Commerce (DOC) and Agriculture (USDA) and a Subsidiary Agreement between the National Oceanic and Atmospheric Administration (NOAA) and USDA sits a highly successful Joint Agricultural Weather Facility (JAWF). Five NOAA meteorologists at USDA and their support staff at both USDA and The World Weather Building, Camp Springs, MD support the critical joint mission. The NOAA mission is to provide real-time global and regional weather and climate data, analyses, interpretations and predictions to assist USDA and the public in understanding and decision making regarding worldwide environmental and crop conditions. The DOC support structure is as follows:

Department of Commerce (DOC)

National Oceanic and Atmospheric Administration (NOAA)

National Weather Service (NWS)

National Centers for Environmental Prediction (formerly NMC)

Climate Prediction Center (CPC)

Climate Operations Branch (COB)

Agricultural Weather Section at JAWF

(includes five Meteorologists on-site)

The CPC is NOAA's official operational component responsible for real-time awareness of global and regional climate conditions, over land, ocean and the atmosphere, on time scales ranging from days to weeks to seasons in the recent past. The CPC mission includes prediction of conditions where possible and an understanding of climate conditions in an historical context. Through NWS and CPC, NOAA makes a commitment to share in operationally providing (i.e., in near-real-time):

- | | |
|------------------------------|---|
| Global and regional data | - Land (global first order & national cooperative networks);
atmospheric, oceanic (e.g., ENSO), & satellite data |
| Plots, analyses, products | - Data processed over any time and space scales, graphics
from all NCEP, Weekly Weather & Crop Bulletin |
| Awareness & interpretation | - Continuous understanding of global conditions & anomalies |
| Environmental predictions | - Short term weather through seasonal and interannual |
| Communications | - T1 links, Internet/World Wide Web, NOAAPORT, E-mail |
| Hardware & software | - PCs, servers, networks, workstations, contractors & code |
| Personnel support | - Five meteorologists+ on site; much support off-site |
| Regional Climate Centers (6) | - Administered by NWS; functional interaction with CPC |
| UCAN | - Support the Unified Climate Access Network vision |

Maintaining and improving this interagency activity is an important service for the public. This will be especially challenging with anticipated future budget cuts. We will actively pursue improvements in each of the above areas with special emphasis on: integration with NWS modernization and addition of AWIPS (Advances Weather Interactive Processing Systems) equipment; improvement in electronic receipt, dissemination and real-time access of information, publications and briefings.

GLOBAL AGRICULTURAL WEATHER SITUATION

Raymond P. Motha
Supervisory Meteorologist
USDA/WAOB/JAWF

Summary

The immediate area of concern is the prospect for winter wheat in the southern Great Plains. Spring planting conditions must also be watched closely in the western Corn Belt. Recent rain helps Argentina's soybeans but more is needed. Moisture supplies are favorable for early spring growing conditions in Ukraine and southern Russia. Periodic flooding hits eastern corn areas of South Africa.

United States

Winter wheat was poorly established in the southern Great Plains prior to winter dormancy, due to insufficient autumn moisture. Highly fluctuating winter temperatures and below-normal precipitation and periodic high winds have aggravated crop conditions. Recent warmth is pushing the crop out of dormancy, but winter grains are still vulnerable to late winter and early spring freezes. This year is very similar to the 1988 (planting)/1989 (growing) season.

If the persistent, highly variable weather pattern plaguing the Great Plains expands into the western Corn Belt, spring planting may be affected. Timely rain would then be needed for corn and soybean establishment.

Europe

Winter crop prospects are favorable, although periodic bitter cold in the northeast stressed winter barley and rapeseed. Autumn moisture was favorable for winter crop emergence. Atlantic storms have recently brought precipitation for spring growth. The long running drought over the Iberian peninsula was broken by heavy winter rains.

FSU

Winter grains are in good condition, with favorable planting moisture and adequate winter snowcover in most areas. Moisture supplies in traditional winter wheat producing areas in Ukraine and southern Russia have been much better than the previous year, providing a good start to spring growing conditions.

Northwestern Africa

Adequate to abundant moisture since planting began in November has kept winter grains well-watered in Morocco. Rainfall in November and December was below normal in Algeria and Tunisia, but soil moisture has increased substantially in recent weeks, boosting winter grain prospects.

South Africa

One of the wettest corn growing seasons on record provides much improved production prospects compared with last year's drought-reduced crop (9.0 MMT February 1996 estimate vs. 4.7 MMT in 1994/95). One concern is the response of local drought-resistant varieties to cold, wet weather. Beneficially warmer and drier weather in early February improved conditions, but marginal corn growing areas in the west experienced some stress. Inundating rain this past week renewed flooding in sections of the corn belt and coastal sugarcane areas.

Argentina

Wheat production declined (8.6 MMT vs. 11.3 MMT in 1994/95) due to unfavorably dry weather. Oppressive heat and dryness adversely affected corn establishment in December, but January weather improved for corn development (11 MMT February 1996 estimates vs. 10.9 MMT in 1994/95). Soil moisture is limited due to the variable rainfall. Recent rain benefits flowering soybeans but more rain is needed.

Brazil

Heavy rain in January and early February eased early season dryness in time for soybean flowering (23.0 MMT vs. 26.0 MMT in 1994/95, a new record). Moisture supplies have dramatically increased in recent weeks, with some localized flooding.

Australia

Timely rain boosted wheat production to 17.0 MMT vs. 8.9 MMT in 1994/95. Most summer crop areas have received abundant rains, improving prospects for sorghum, cotton, and sugarcane. Due to a recent drying trend, western and southern pastures need rain.

China

Warmer weather causes winter wheat to lose some winter hardiness across the North China Plain. January rainfall benefits winter grains and oilseeds across the Yangtze Valley.

Foreign Regional Issues Shaping the Long-Term Agricultural Trade Outlook

Commercial Agricultural Division
Economic Research Service
USDA



SUMMARY

- Tighter bulk commodity markets
 - Competition counters U.S. gains after 2000
 - Continued growth in HVP share of U.S. exports
 - Key regional issues shape the trade outlook
 - China market grows, but slower than some analysts predict
 - EU exports curbed by Uruguay Round limits
 - Limited FSU imports and export competition
 - East Asian demand concentrated in HVP's
 - Strong growth in Mexican demand



OUTLINE

- Overview -- Rip Landes
- China -- Hunter Colby
- European Union (15) -- Maryanne Normile
- Former Soviet Union -- Christian Foster
- East Asia -- John Dyck
- Mexico -- Dan Plunkett

Background Assumptions

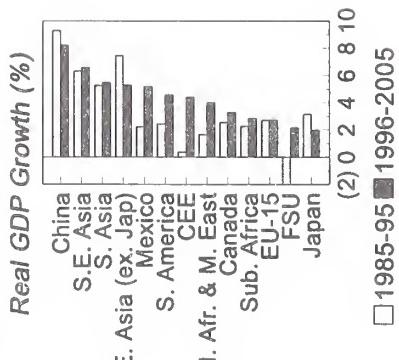
- U.S. Policy Assumptions (1990 Legislation)
 - Target prices & payment yields at 1995 levels
 - Limited use of acreage reduction program
 - Compliance with UR limits on EEP
 - CRP acreage falls to 27.5 million acres in 2005
- International Policy Assumptions
 - Compliance with existing multilateral, bilateral & regional agreements
 - No major new agreements
 - No WTO accession
 - No enlargement of EU-15



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Foreign GDP Growth Prospects

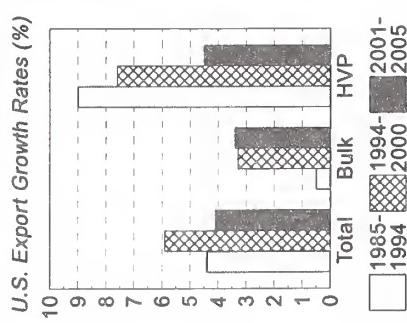
- Asia sustains fast growth
- Faster growth in:
 - Latin America
 - CEE & FSU
 - Middle East
- Steady, relatively slow growth in developed countries



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Total Agricultural Trade Outlook

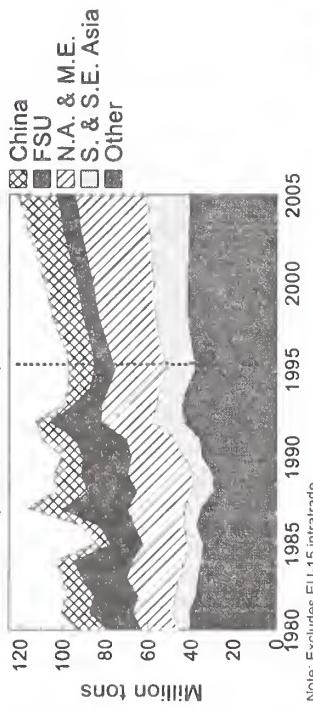
- Bulk exports strengthen
 - LDC demand
 - Firmer prices
 - Less EU competition
 - HVP exports slower
 - Demand from Asia & NAFTA
 - U.S highly competitive
 - But, assume no new market openings
- U.S. exports near \$80 billion in 2005



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World Wheat Imports

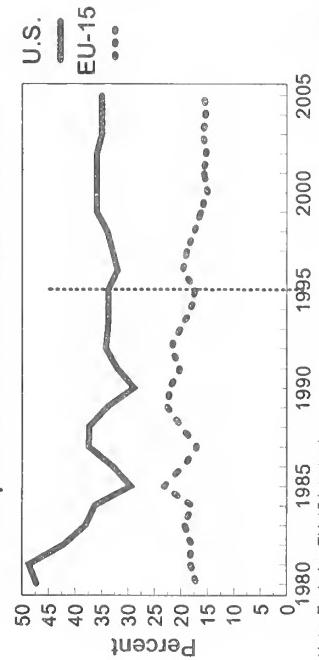
China, Southeast Asia & North Africa drive faster growth in import demand...



Note: Excludes EU-15 intratrade.

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U.S. market share rises until EU & other competition increases after 2000...

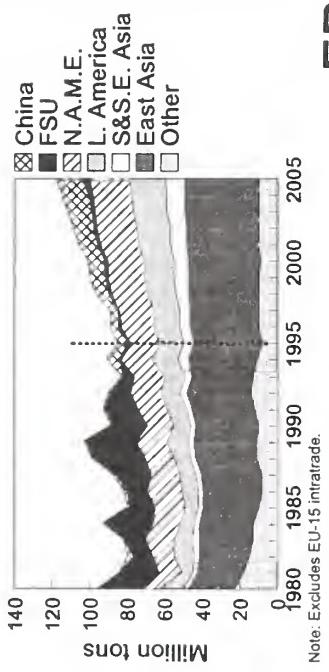


Note: Excludes EU-15 intratrade.

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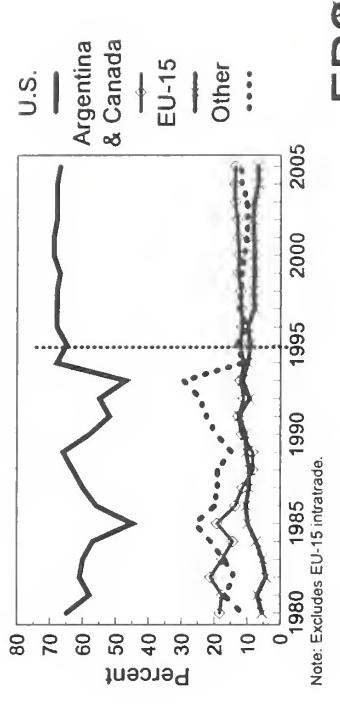
World Coarse Grain Imports

Developing country feed demand & shifts from barley & feed wheat strengthen corn demand...



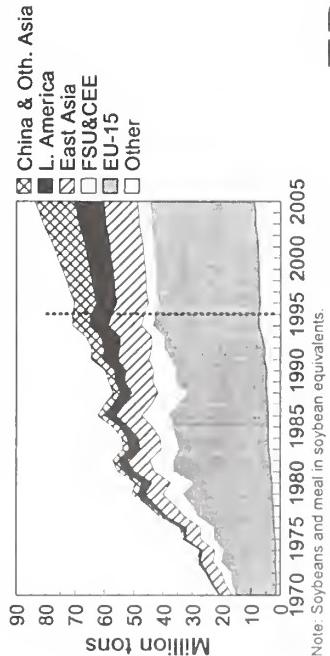
World Coarse Grain Market Shares

U.S. market share continues to rise, with limited new competition after 2000...



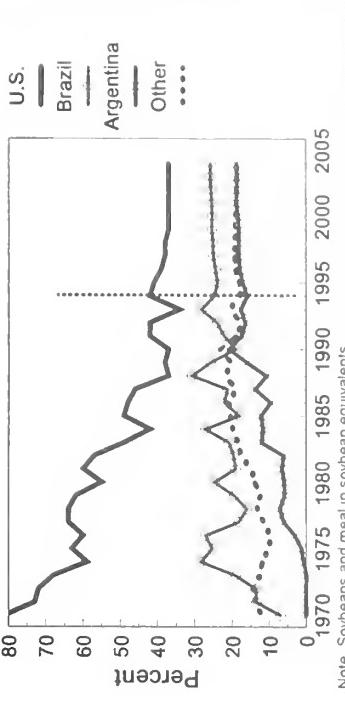
World Soybean & Meal Imports

Developing countries, including China & Mexico, drive future growth...



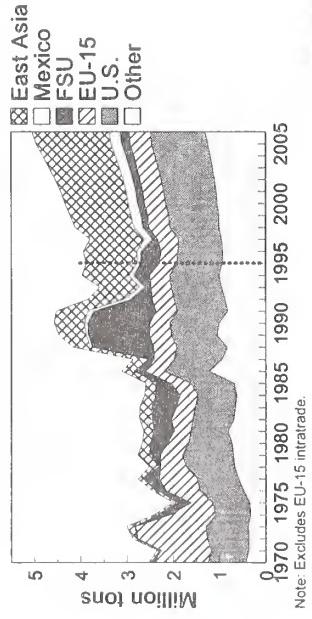
World Soybean & Meal Exports

U.S. market share continues its slow decline...



World Beef Imports

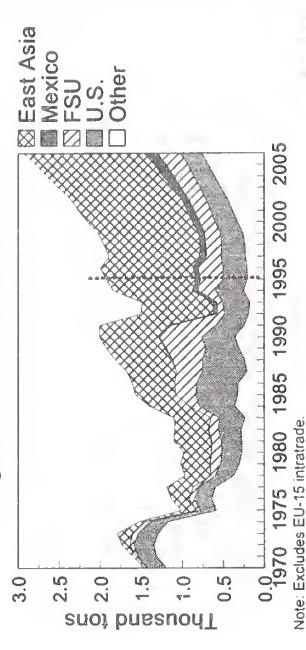
East Asia leads strong growth in demand & U.S. market share continues to rise...



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World Pork Imports

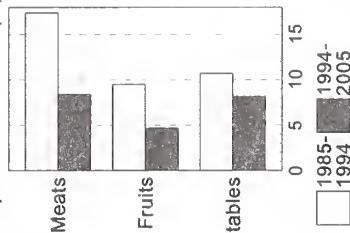
East Asia also leads growth in pork demand, with gains in U.S. market share



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HVP Export Prospects

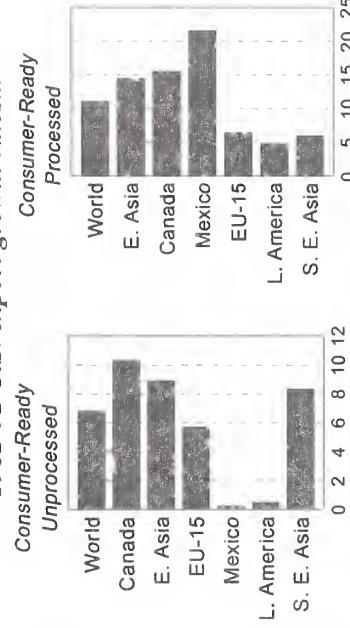
U.S. Export Growth Rates (%)



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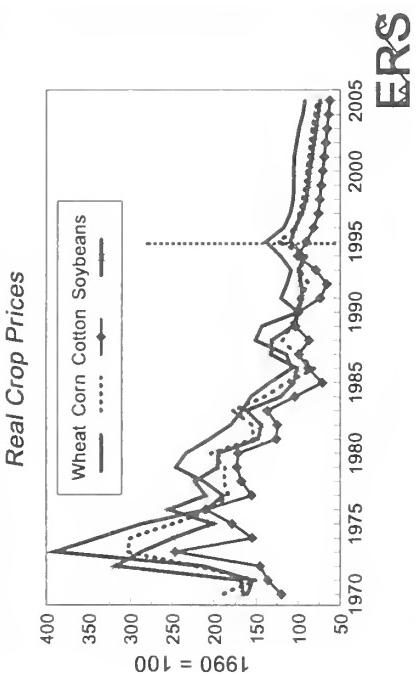
Major HVP Export Markets

1982-92 U.S. export growth rates...

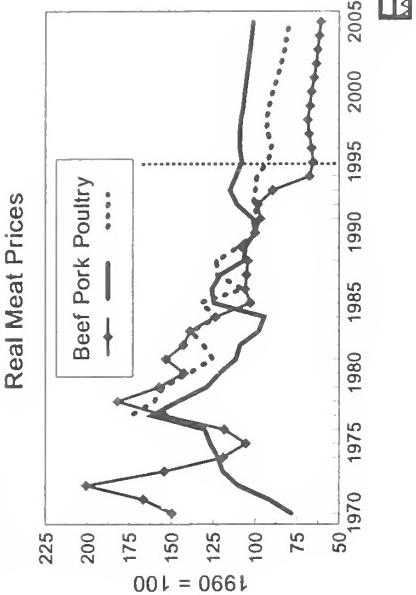


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Crop Prices Projected to Strengthen Gradually



While Meat Prices Continue to Decline



Key Regional Issues

- China
 - Key source of global bulk trade growth
- European Union
 - Post UR competitiveness
- Former Soviet Union
 - Trade impacts of economic transition
- East Asia
 - Major source of HVP trade growth
- Mexico
 - Strong recovery of key U.S market

China's Rank in 1994/95 World Agricultural Trade

Commodity	Imports	Exports
Wheat	1st	---
Rice	2nd	26th
Corn	4th	4th
Barley	3rd	---
Cotton	1st	28th
Soy Oil	1st	13th
Palm Oil	1st	4th
Poultry mt	9th	6th

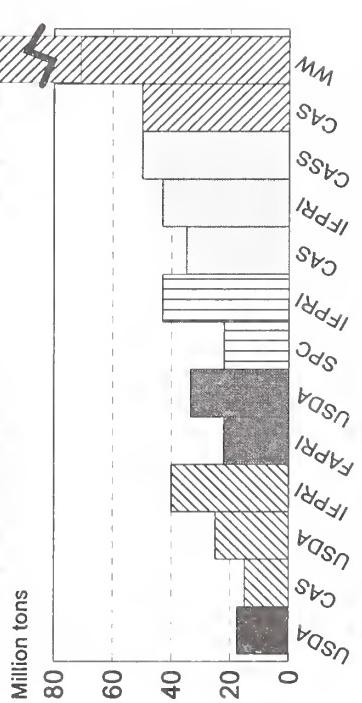
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CHINA

Hunter Colby
Commercial Agriculture Division
Economic Research Service
USDA

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Estimates of China's Future Grain Imports



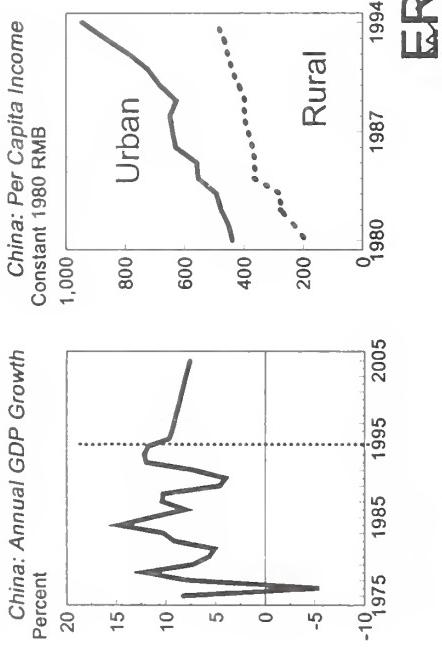
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Assumptions Issues

- Social/political stability
- No consensus income or price elasticities
- Self-sufficiency abandoned
- Good technical parameters non-existent (feed/meat conversion rates, yields)
- Infrastructure development keeps up with trade growth
- Government trade & stock policy not transparent
- Constant policy/market price margin
- Impact of state-trading quotas
- Tariffs & state trading restrict meat imports in favor of coarse grains
- Administrative fiat affects crop selection/sown area

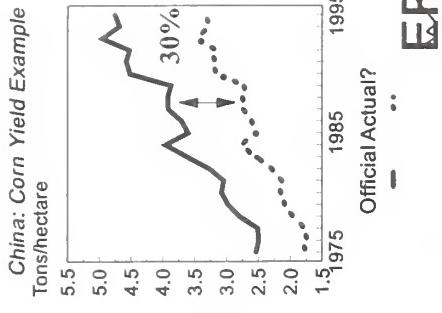
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Continued Rapid Economic Growth

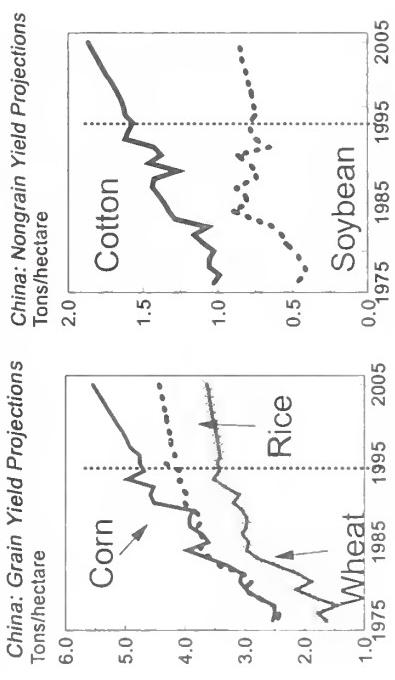


What is the Potential for Grain Yield Growth?

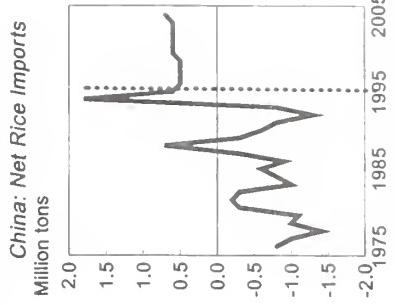
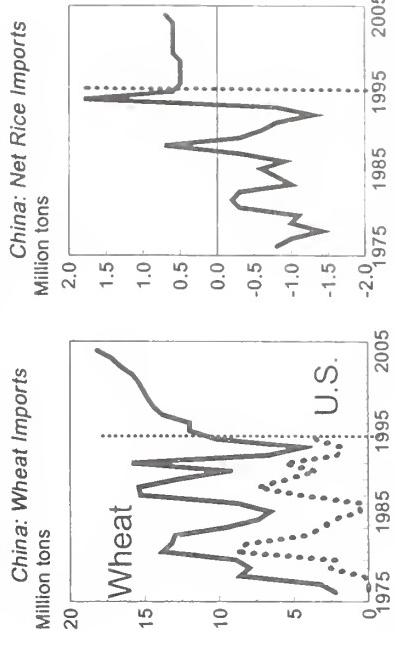
- Corn, wheat, and rice area are underreported, but...
- Yield figures are raised to approximate actual production, so...
- Likely more potential for yield growth than China's official statistics suggest



Technology, Management & Seeds to Boost China's Yields

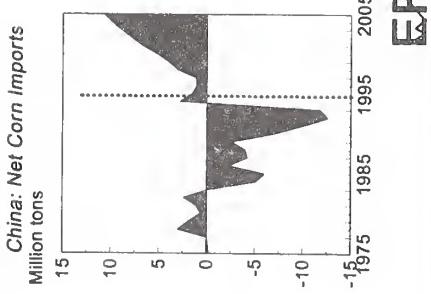


Rising Domestic Demand Drives Net Food Grain Imports

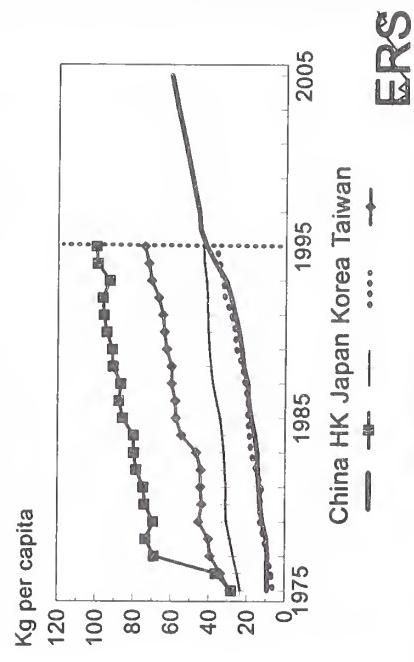


Meat Demand Drives Shift From Corn Net Exports to Imports

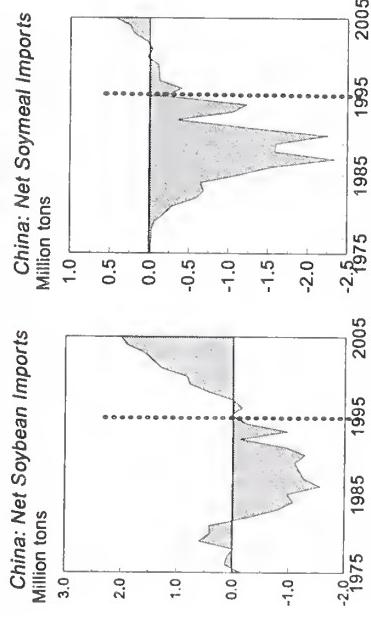
- Feed imports cheaper than meat imports
 - Feed efficiency rising, but...
 - Meat output growth in grain- and protein-fed commercial sector, so...
 - More feed grains and protein meals required
 - Rising use of compound feed by small producers



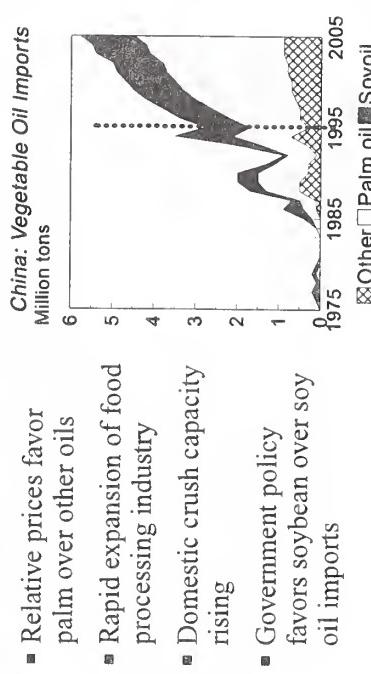
China's Per Capita Meat Demand Surpasses Korea and Japan



Growing Meat and Oil Demand Drives Oilseed and Meal Imports



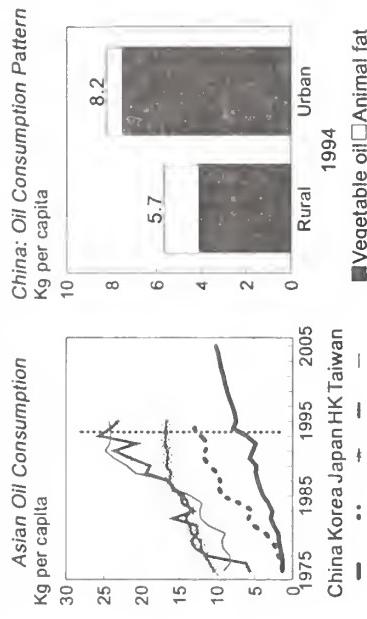
China: Net Edible Vegetable Oil Import Forecast



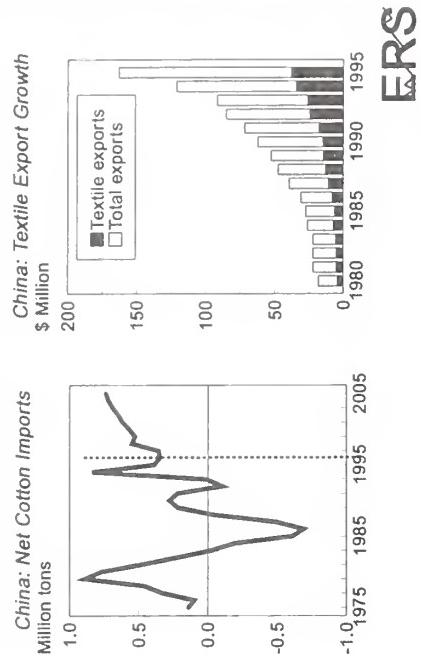
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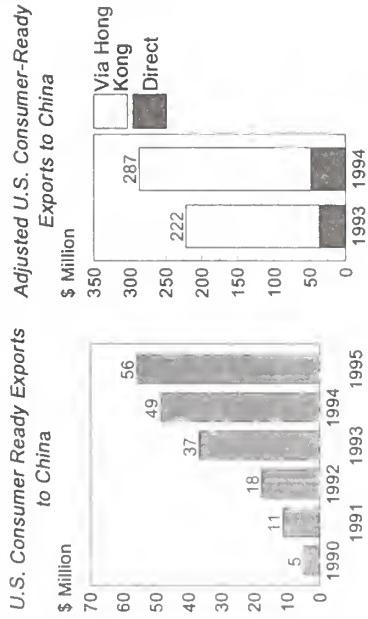
Which Path Will China's Edible Oil Consumption Follow?



Domestic and Export Textile Demand Drive Cotton Imports



China the 10th Largest Market for U.S. Consumer-Ready Foods



EUROPEAN UNION

Mary Anne Normile
Commercial Agriculture Division
Economic Research Service
USDA

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EU: Summary

- Uruguay Round commitments will be major determinant of trade and production
- EU can fulfill UR commitments under current policy under certain conditions
- EU will be able to export some commodities without subsidies, particularly in later years

EU Rank in World, 1995

	Production	Imports	Exports
Wheat	2	12	3
Coarse grains	3	7	2
Barley	1	--	1
Soybeans	9	1	--
Soymeal	3	1	5
Beef	2	4	3
Pork	2	8	1
Poultry	2	6	2

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EU: Key Issues in the Outlook

- Effects of CAP reform
- Uruguay Round implementation
- Productivity growth

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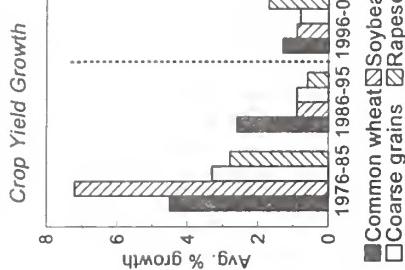
EU: Main Assumptions

- Current policy instruments maintained
 - policy prices constant
 - set-aside, intervention retained
 - arable base unchanged
- Low or zero price transmission for most commodities
- Some internal market price flexibility
- Slower yield growth for most crops

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EU: Crop Yield Growth Slows

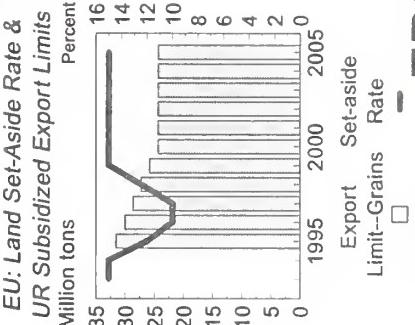
- Continued slowing of yield growth due to CAP reform
- Rapeseed yield growth higher as hybrids adopted



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EU: Set-Aside Rate

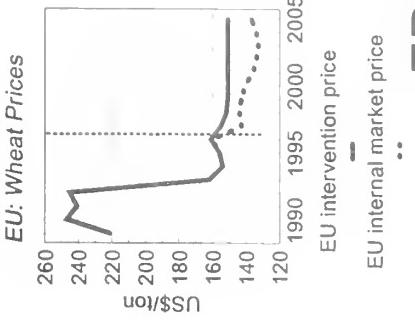
- Set-aside rate low in early years, reflecting market conditions
- Set-aside rate gradually increased to constrain supply as GATT export limits tighten



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EU: Wheat Prices

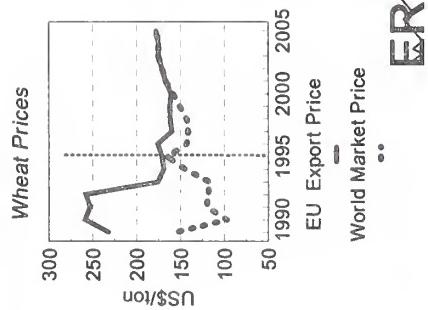
- EU intervention price is constant in ECU
- Internal market price will decline to maintain exports within GATT limits



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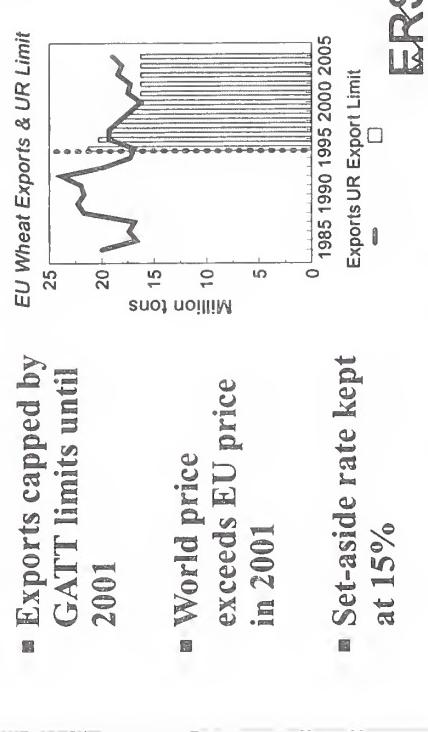
EU & World Wheat Prices

- EU export price is internal market price plus transport charges
- World price exceeds EU price in 2001, EU exports without subsidies



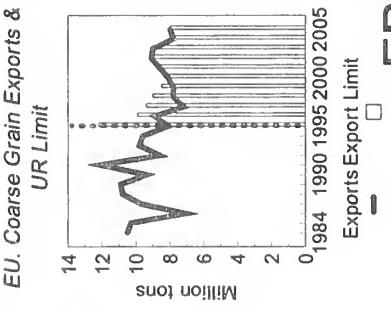
EU: Wheat Exports & UR Limit

- Exports capped by GATT limits until 2001
- World price exceeds EU price in 2001
- Set-aside rate kept at 15%



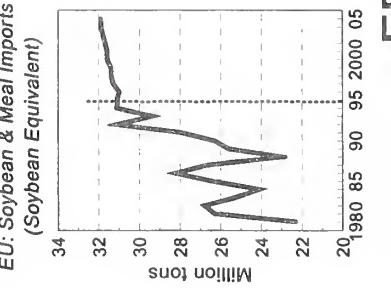
EU: Coarse Grain Exports & UR Export Limits

- GATT limits total coarse grain exports
- Exports less than GATT limit in some years
- Set-aside continues to constrain output
- No unsubsidized exports



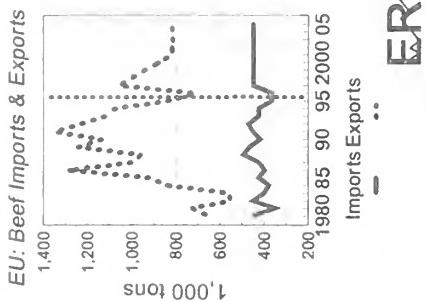
EU: Soybean & Soymeal Imports

- Import growth slows as lower grain prices favor grain feeding over protein meal
- Soybeans account for most growth in 1996-2000, soymeal favored in later years
- Soybean meal use grows at expense of other protein meal



EU: Beef Trade

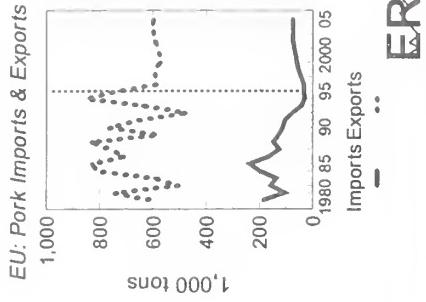
- Uruguay Round commitments limit exports
- No unsubsidized exports
- Imports limited to volumes covered under trade agreements



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EU: Pork Trade

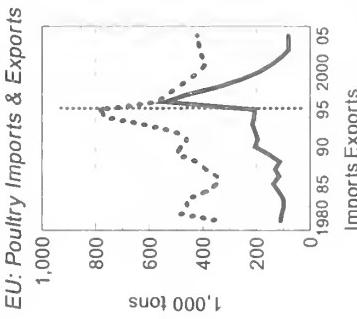
- Exports constrained by Uruguay Round limits on subsidized exports
- Extent of unsubsidized exports uncertain
- Imports rise due to minimum access commitments



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EU: Poultry Trade

- Exports constrained by Uruguay Round limits on subsidized exports
- Unsubsidized exports rise
- Imports fall as domestic production rises, exports limited



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EU: Prospects for HVP Trade

- EU a world leader in HVP trade
- UR limits on export subsidies on HVP may reduce exports
- Limited improvement in market access in UR for HVP imports
- U.S. HVP exports to EU rising as share of U.S. agricultural exports

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EU: Pressures for Policy Change

- Price weakness or high stocks
- Enlargement to East
- New GATT round?

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FORMER SOVIET UNION

Christian Foster
Commercial Agriculture Division
Economic Research Service
USDA

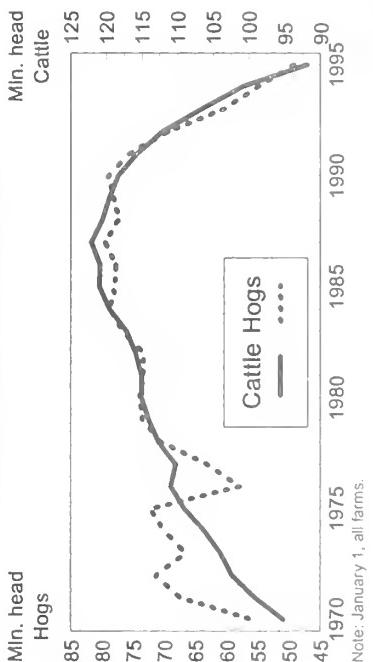


FSU: Outlook for 2005

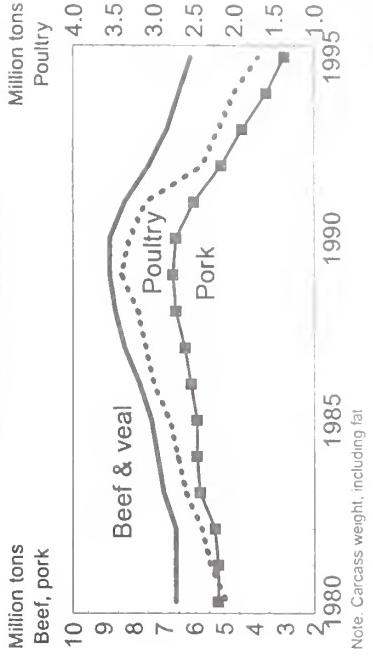
- Livestock Sector Will Not Recover Quickly
- Grain Imports Will Remain Low
- Soybean Meal Imports Increase Modestly, but Remain Below Pre-Reform Levels
- Imports of HVP's Continue Growth in the Near to Medium Term



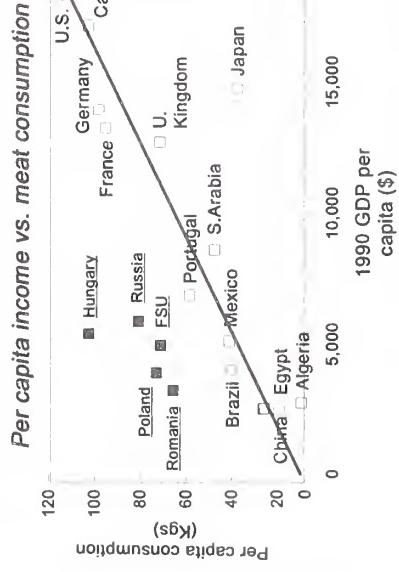
FSU: Livestock Inventories



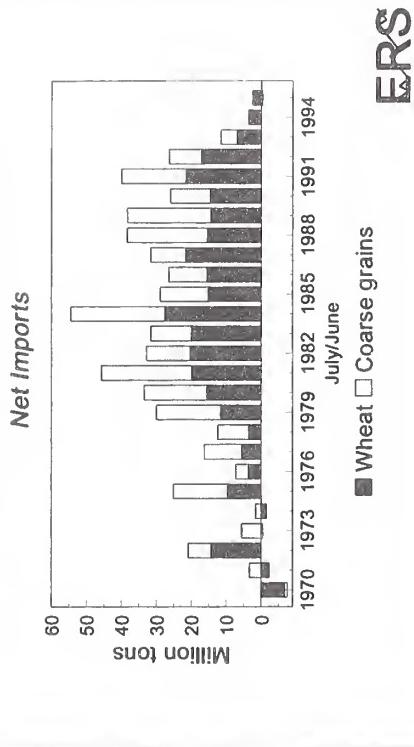
FSU: Meat Production



Per Capita GDP & Meat Consumption, 1990



FSU: Net Grain Imports

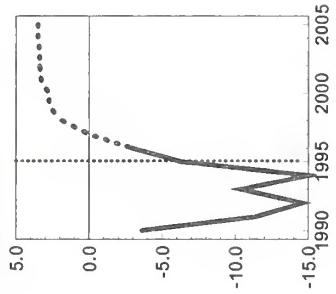


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FSU: Macro Assumptions

- Economic reform in the FSU continues
- By 1998, real GDP begins rising
- Inflation stabilizes at 50% annually

Real GDP Growth Rate
Percent

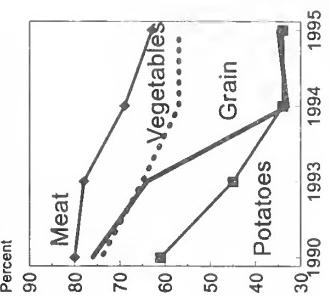


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FSU: Agricultural Policy Assumptions

- State procurement system nearly eliminated by 2005
- Producer/consumer subsidies remain low
- Slow progress in land reform, privatization of down/upstream firms, and development of market infrastructure

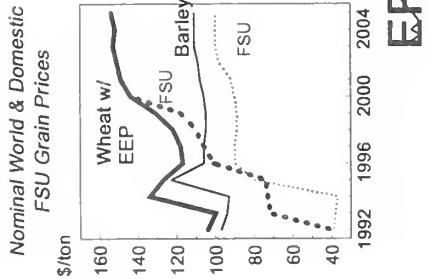
Russia: Share of Goods Marketed by State Procurement
Percent



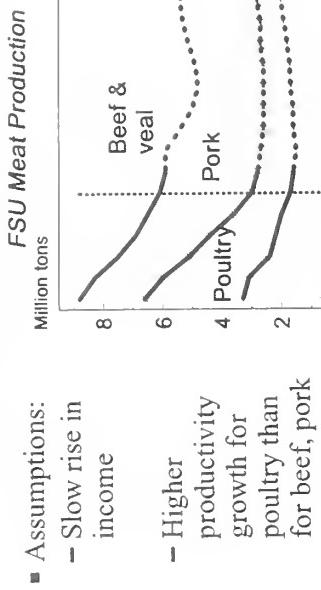
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FSU: Trade & Price Policy Assumptions

- Continued growth in private sector trade activity
- Tariffs on bulk commodities remain low, on livestock products at 15-25%
- Domestic grain prices gradually approach world prices



FSU: Projected Meat Production

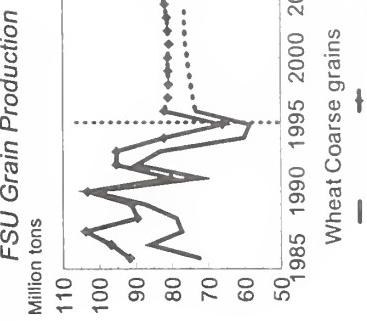
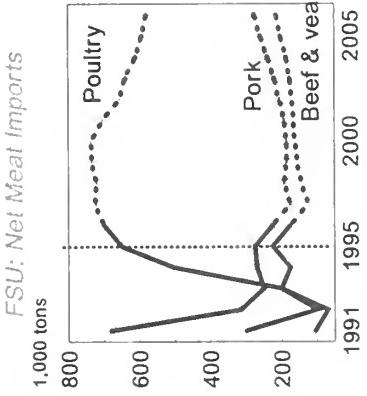


- Assumptions:
 - Slow rise in income
 - Higher productivity growth for poultry than for beef, pork

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FSU: Projected Net Meat Imports

- Assumptions:
 - Import Tariffs Constant at 15-25%
 - Export subsidies (EU, US) cut back under UR



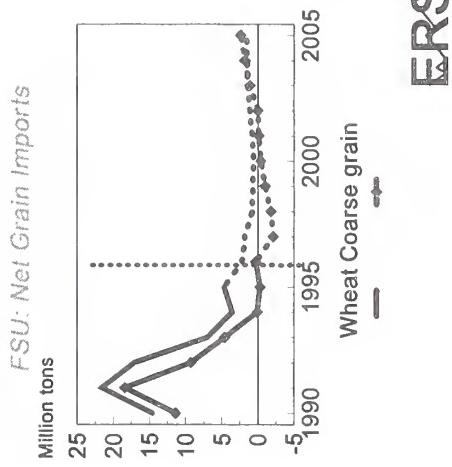
- Assumptions:
 - No major land reform
 - Modest yield growth
 - Input use remains below former levels

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FSU: Projected Grain Production

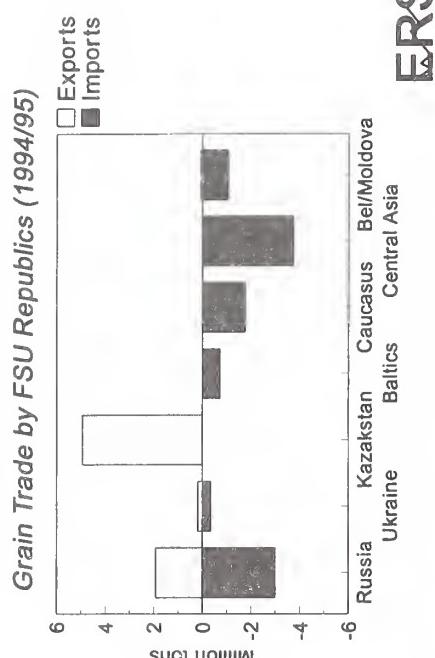
FSU: Projected Net Grain Imports

- Assumptions:
 - Import tariffs low or nonexistent
 - Rising incomes and higher meat consumption boost grain use



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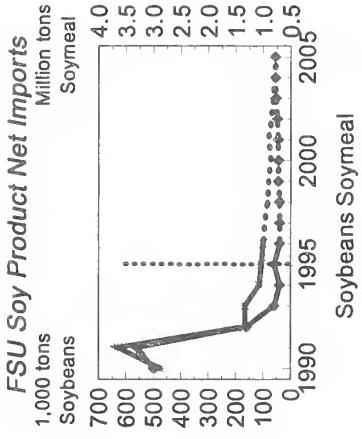
FSU: Grain Trade in 1994/95



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FSU: Projected Oilseed Net Imports

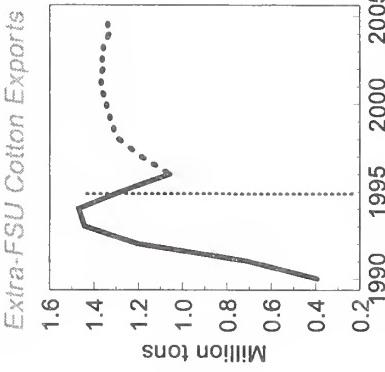
- Assumptions:
 - Domestic production of other oilseeds increases
 - Slow recovery of livestock sector



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FSU: Projected External Cotton Exports

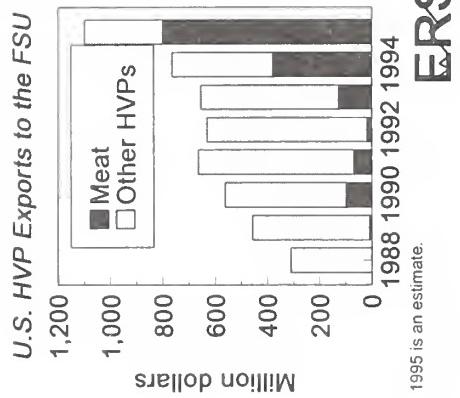
- Assumptions:
 - Area falls as region diversifies
 - Productivity gains increase yields



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FSU: Reasons for Rising HVP Imports

- Growing income inequality
- Appreciation of real exchange rate
- High-cost domestic production
- Growth in private sector trade
- Successful export promotion/marketing



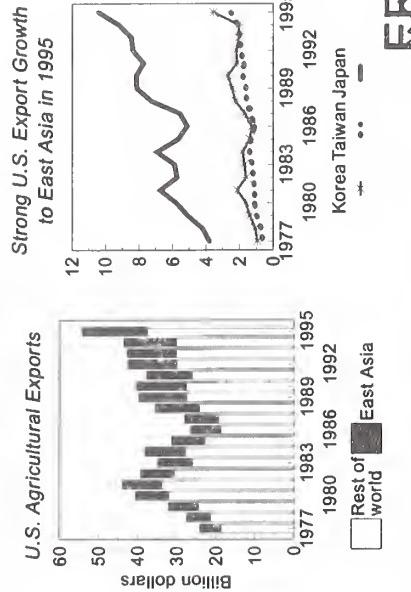
EAST ASIA

John Dyck

Commercial Agriculture Division
Economic Research Service
USDA



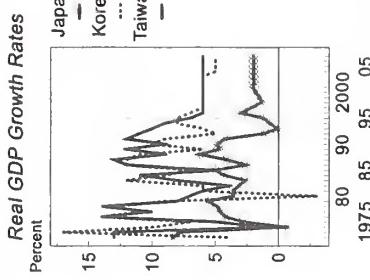
East Asia: The Largest Regional Market for U.S. Agriculture



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Economic Growth in East Asia

- Economic growth is expected to moderate in Taiwan and Korea, but, at 6%, will still support fast dietary change
- Economic growth in Japan will resume, but be slower than in the past



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East Asia: Other Economic Factors -- No Shocks

- Population growth slow, getting slower
- Youth market less important, senior market more important
- Inflation slowing in Korea and Taiwan
- Deflation ending in Japan, very modest inflation in the future
- Exchange rates appreciating slowly, gradually

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East Asia: Policy Environment

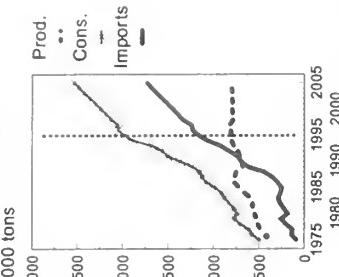
- Economic policies will generally encourage further liberalization, which should result in lower input costs for agriculture
- Agricultural subsidies will remain
- Protectionism for agriculture will be high, limited by multilateral and bilateral agreements

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Beef Market in East Asia

- Consumption will continue to grow in all three markets
- Production will be stable, with large subsidies
- Imports will increasingly favor grainfed beef
- Tariffs are the remaining barrier in Japan and in Korea after 2000

Beef Supply & Use

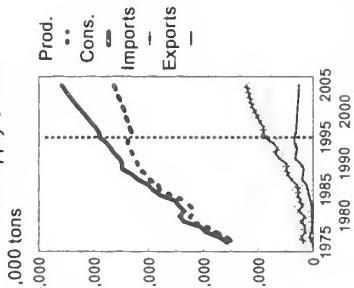


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Pork Market in East Asia

- Consumption will be affected by beef prices
- Supply uncertainty: competitiveness in East Asia could increase as costs fall
- If trade barriers fall, lively trade in cuts will follow

Pork Supply & Use

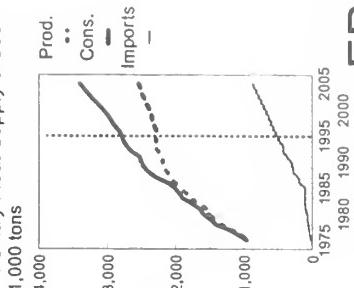


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Poultry Market in East Asia

- Fewer, larger-scale producers will maintain current levels of total output
- Increased consumption will be met primarily by greater imports, primarily of legs and processed meat

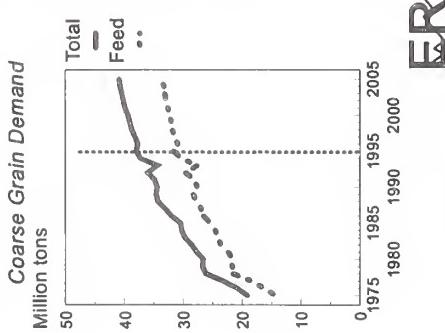
Poultry Meat Supply & Use



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East Asia Coarse Grain Market

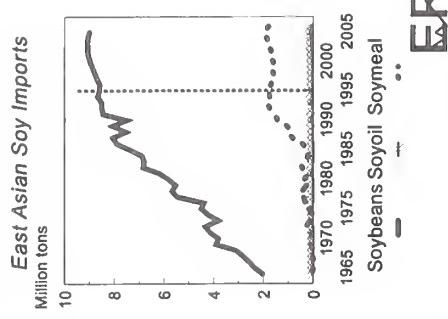
- Feed use will add another 2.5 million tons to imports in the next decade--much less growth than in the past
- Nonfeed use will grow faster than feed use, stimulated by industrial uses of starch



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Soybean Complex Will Have Slow Import Growth

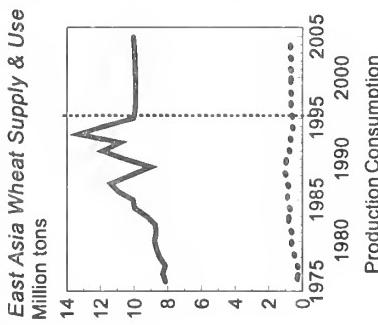
- Under the UR Agreement, oilseed crushing in Korea and Japan will be less profitable, as oil tariffs decline
- Soy oil faces continued competition from other oils
- Soymeal use will stagnate as livestock imports grow, keeping livestock production from increasing



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Wheat Market in East Asia

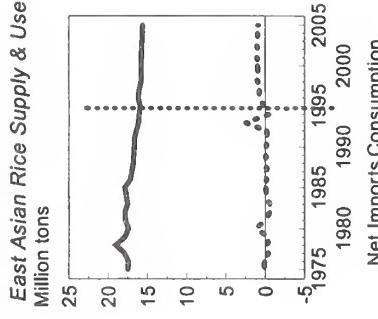
- High wheat prices will curb feed use of wheat
- Food use of wheat will be stable, leading to stable wheat imports
- The milling wheat market increasingly demands specific varietal characteristics



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Rice Market in East Asia

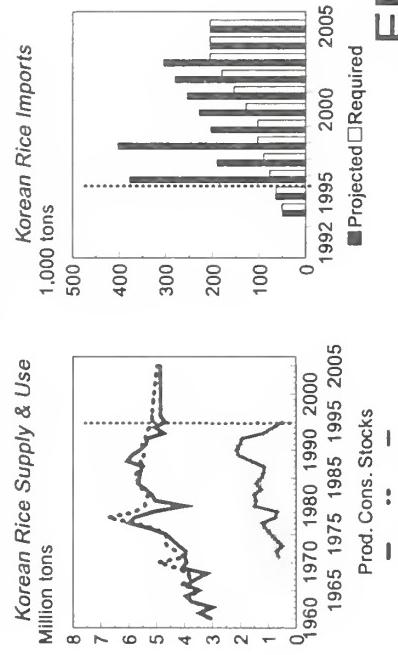
- Rice consumption will continue to decline
- Uruguay Round commitments will require imports & reduced production in Japan



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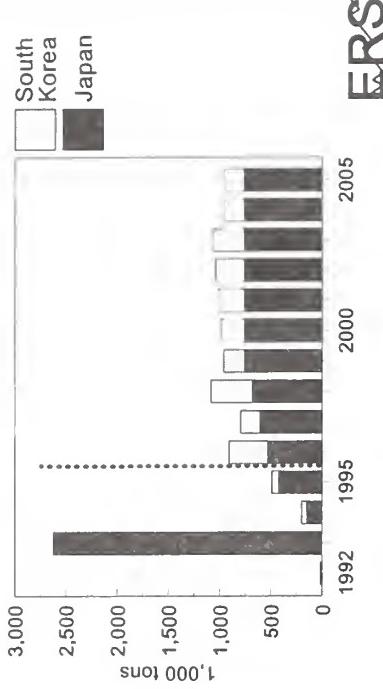
Korea: Prescription for Rice Imports

Production below consumption and low stocks...



East Asia: Rice Imports

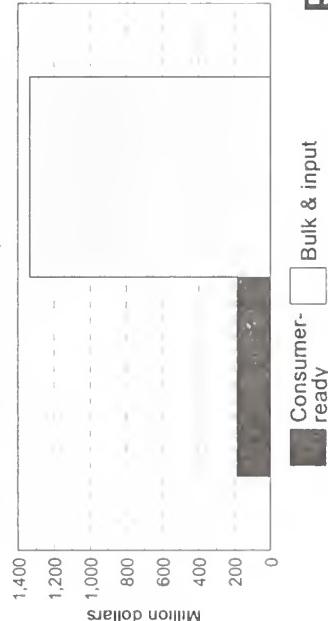
Rice Imports



Korea in 1995: A Pattern of the Past

Gains in U.S. exports came mostly from higher share in the bulk market...

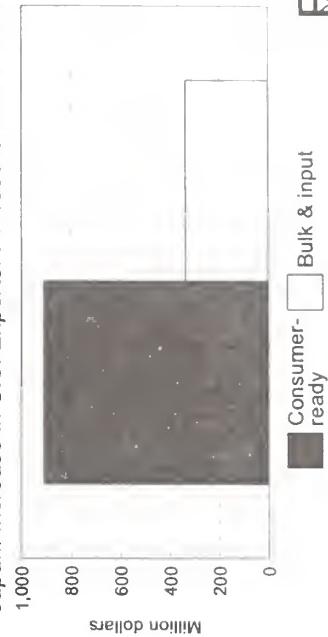
Korea: Increase in U.S. Exports in FY 1995



Japan in 1995: A Pattern for the Future

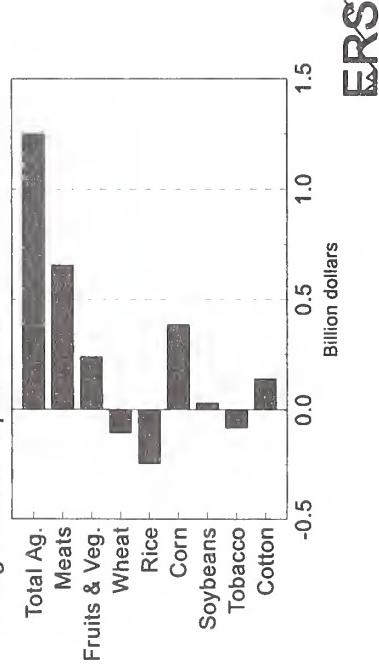
Gains in U.S. exports came mostly from consumer-ready products...

Japan: Increase in U.S. Exports: FY 1995 Over FY 1994



Changes in U.S. Exports to Japan

Change in U.S. Exports: FY 1995 Over FY 1994



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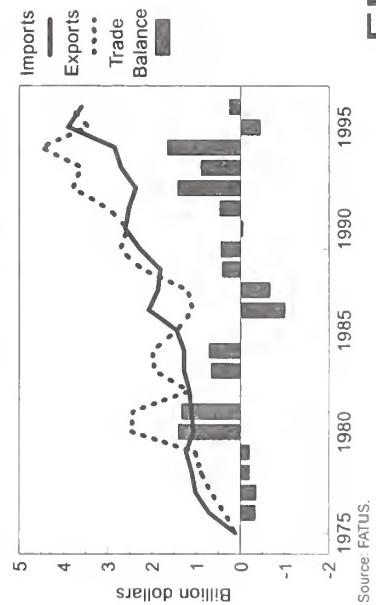


Mexico: Summary

- Mexico is Expected to be a Growing Market
 - Sustained economic growth
 - ~ Rising incomes = rising food demand
 - Free trade under NAFTA by 2008
- Important to a Wide Range of U.S. Exporters
 - Grains & feeds
 - Meat & dairy
 - Fruits & processed foods



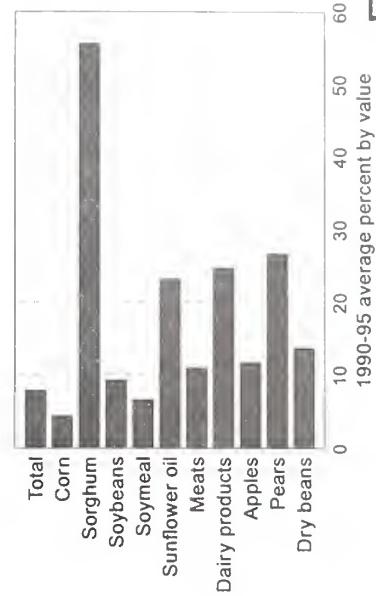
U.S. Farm Trade With Mexico



Source: FATUS.



Mexico's Share of U.S. Exports to All Destinations



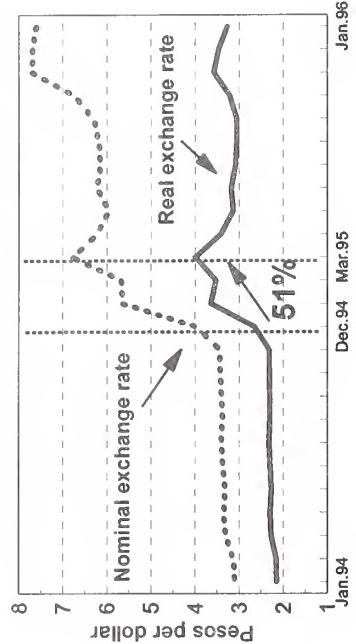
Major Forecasters Agree...

- Mexico's Economy Will Get Straightened Out
 - Monetary & fiscal restraint
 - Continued investment
 - Export-led growth
- Vigorous Long-Term Expansion
 - 1.8% real GDP growth in 1996 & 4.0-6.0% growth expected in 1997
 - Privatization & reform
 - Greater transparency in policymaking

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In the Crisis, Mexicans Lost Purchasing Power Rapidly...

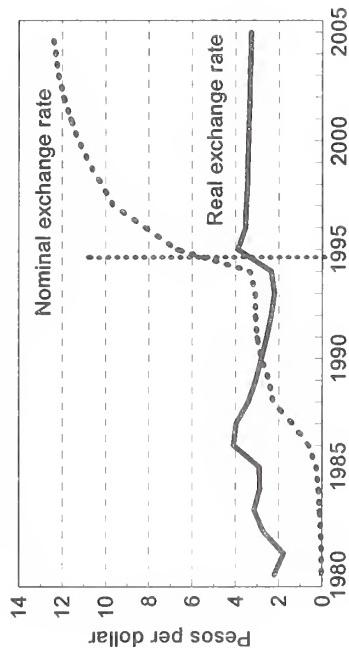
Peso/dollar Exchange Rates



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Despite Nominal Appreciation, Purchasing Power Will Be Steady

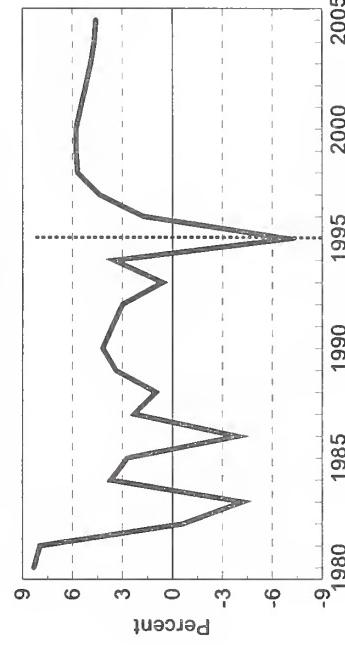
Peso/Dollar Exchange Rates



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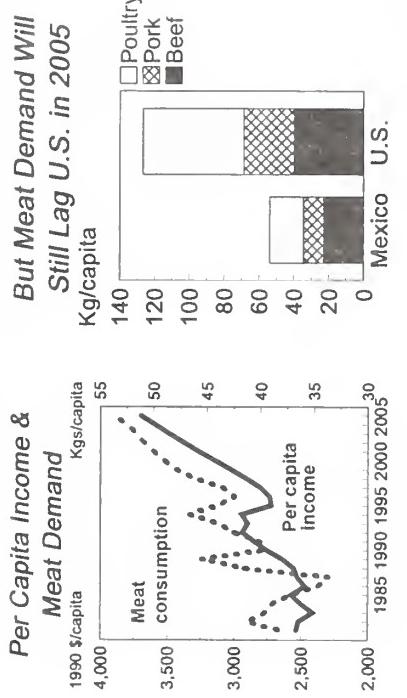
Mexican GDP Will Register Strong Post-Recovery Growth...

Real GDP Growth Rate

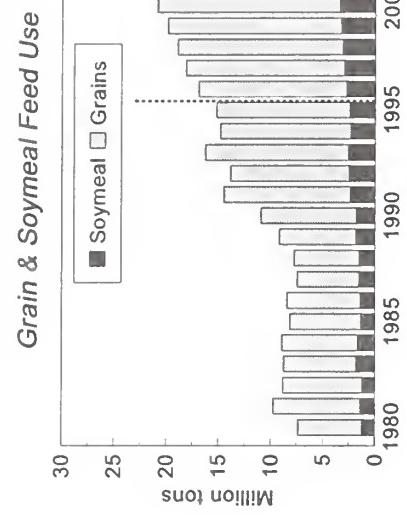


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Income Growth Will Drive Up Meat Demand...



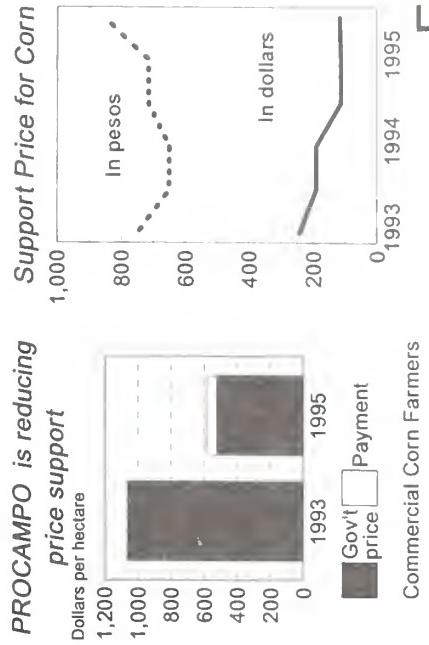
Grain & Oilseed Feed Use Will Rise...



Gains in Mexico's Farm Output Will Be Limited...

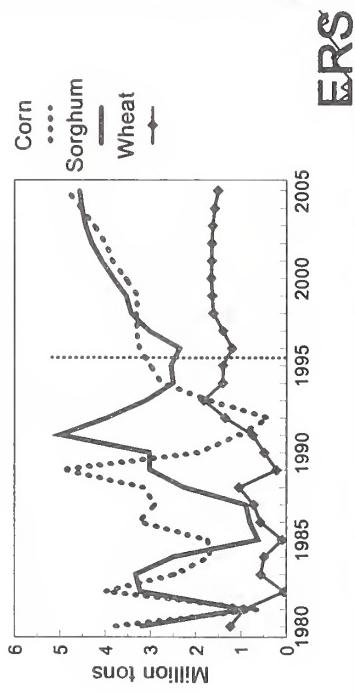
- Structural Limitations
 - Area constraints
 - Large subsistence sector
 - Low level of technology
- Declining Government Intervention
 - Limited producer price support
 - 15 year phase-out for payments
 - Import Competition

Greater Market Orientation for Crop Production



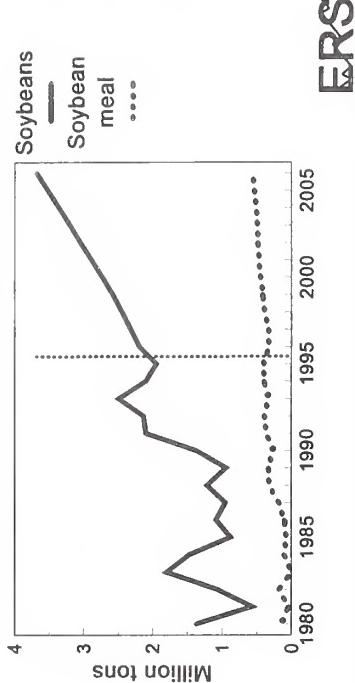
Mexico's Projected Grain Imports...

Grain Imports



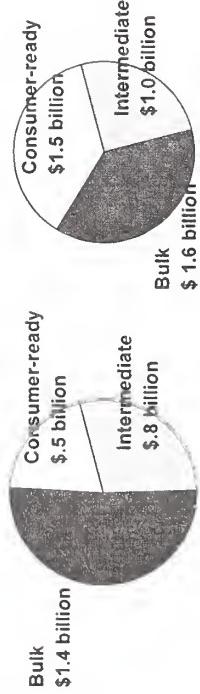
Mexico: Projected Soy Imports

Soybean & Meal Imports



U.S. Farm Exports to Mexico are Shifting...

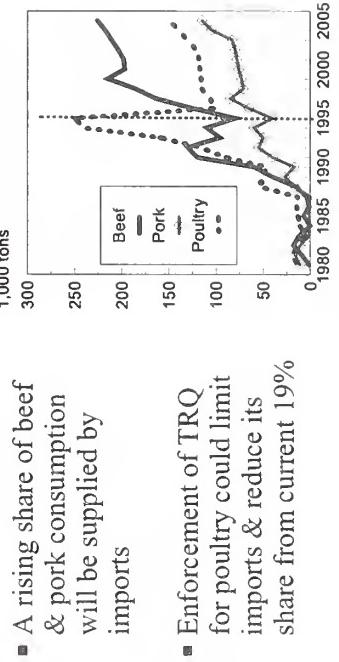
FY 1990



Potential is strong for import growth in consumer-oriented products, including meats
Consumer-ready share rose from 20% in FY 90 to 37% in FY 94, while value tripled

Mexico's Meat Imports Will Rise...

Meat Imports



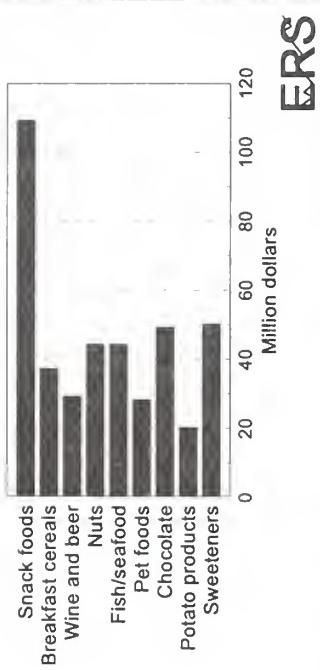
- A rising share of beef & pork consumption will be supplied by imports
- Enforcement of TRQ for poultry could limit imports & reduce its share from current 19%

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Strong Growth Expected in Mexico's HVP Imports...

Selected U.S. HVP Exports to Mexico

FY 1994





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